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# FINANCIAL TIMES

No. 27,264 Friday May 6 1977 \*\* 12p

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## NEWS SUMMARY

### GENERAL

**Copy charge rocks Bonn**  
West German authorities yesterday announced the arrest of a secretary in the Federal Chancellery on suspicion of spying for East Germany. She was a Danish Kahlig-Scheffler, who had been employed in the Chancellery for nearly a year and a half. It is almost exactly three years since Chancellor Willy Brandt signed after a spy, Guenter Guillaume, was discovered working in his office, writes Jonathan Orr in Bonn. Herr Brandt was preceded by Herr Helmut Schmidt. Herr Manfred Schueler, the head of Chancellery, said it could not be justified to compare the new arrest with the Guillaume affair. But he admitted that the woman had access to secret documents during her work in the department responsible for European unification and bilateral relations with western European countries.

### Under scrutiny

The papers were not especially sensitive. Herr Schueler said, a list of the contents appeared a few days later in the Press. The secrecy had known for some time that the woman was under scrutiny. Clearly, Frau Kahlig-Scheffler will not have personal access to the Chancellery's office and papers. When Herr Guilleme was asked in April 1974 his role in the Chancellery was described as modest. It later emerged that he had access to NATO communications. He was jailed for 13 months in December, 1975.

### Imaging

The arrest comes at a particularly bad time for Herr Schueler, set with problems within the official Democratic Party and in alliance with the Liberal Democrats. Officials said that there were plans to change Herr Schmidt's schedule. He is due to leave today for Bonn to attend a summit in London. The strictest sieve. Page 4.

### Woman shot near polling station

A woman was helping police with enquiries at Wednesday, near Wolverhampton after a woman was shot in a shooting incident outside a polling station just before the election began yesterday. Italian Mrs. Antonetta Mousa, 45, was shot near her home in Kidderminster. Wores.

### Times warning

The future of the Times has been thrown into doubt by the decision of the Organisation for Economic Co-operation and Development (OECD) to accept the Sunday Times' bid for a licence to print and publish news. The Sunday Times cannot meet family expenses out of its income, which is only around £12,000 a year after £2,000. Page 8.

### Chief price changes yesterday

Prices in peace unless otherwise indicated.

RISES	
British Medical Association	1.0
British Overseas Airways	1.0
British Petroleum	1.0
British Airways	1.0
British Airways	1.0
British Airways	1.0

### beat ahead

The British Medical Association's explanation of the Government's decision to accept the Sunday Times' bid for a licence to print and publish news. The Sunday Times cannot meet family expenses out of its income, which is only around £12,000 a year after £2,000. Page 8.

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### BUSINESS

## Equities up 3.3; £ falls 11 points

● **EQUITIES** moved again, but closed below the best on pay policy doubts. FT 30-share index ended 3.3 up at 443.2—the highest since July 2, 1973, extending the rise from October's 1976 low to 67 per cent.

● **GILTS** rose slightly; shorts were mixed. Government Securities Index was unchanged at 69.76.

● **GOLD** closed \$1 down at \$146.875.

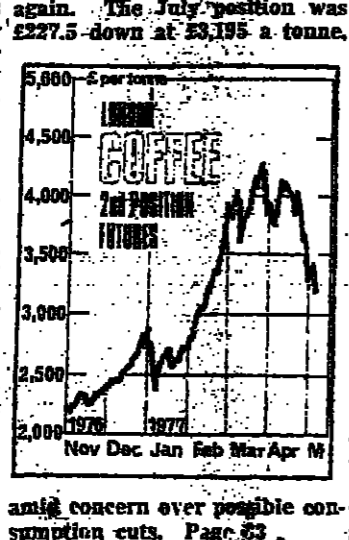
● **STERLING** fell 11 points to \$1.7188. Its trade-weighted depreciation was \$15 (61.6). Dollar's widened to 1.37 per cent. (1.32).

● **COFFEE** futures fell sharply again. The July position was \$27.5 down at \$3.95 a tonne.

### WALL STREET

● **SAUDI ARABIA'S** Crown Prince Fahd agreed in principle to raise the price of crude oil to \$8 per barrel, above 1976 levels. Saudi Arabia's initial contribution to the IMF World Bank will be less than \$4bn. Page 5.

● **BANK OF ENGLAND** repeated its signal to the money market calling for moderation in any further downward trend in short-term interest rates.



### COMPANIES

● **NATIONAL** and Commercial Banking Group pre-tax profits rose to £31.1m (£28.3m) in the six months ended March 31. Page 25 and Led.

● **WHESCO** pre-tax profit was £1.25m (£1.77m) on sales of £19.95m (£17.19m) for the half-year to March 26. Page 24.

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## Liberals to force Healey's defeat on 5½p petrol rise

BY RICHARD EVANS, LOBBY EDITOR

The Cabinet now accepts that MPs will probably reject the controversial 5½p a gallon increase in petrol imposed in the Budget and that the additional Excise duty will lapse on August 5.

The prospect of a humiliating defeat follows the failure of Mr. Callaghan and Mr. Denis Healey, the Chancellor, to dissuade the Liberals from joining the Conservatives and opposing the increase in petrol. Mr. David Steel, the Liberal leader, has given a firm public commitment that the party's 13 MPs will not back down from their total opposition to petrol because of the damaging effect they claim it has had on essential transport costs in rural areas.

There was no indication last night that Mr. Healey intends to increase other taxes at present to make up the £300m additional revenue a year brought in by the petrol duty.

### Determined

Until this week the Government and the Liberals appeared to be playing a game of brinkmanship, with many MPs expected to back down in return for some form of Government help for rural transport. But Mr. Steel made it clear in a determined speech last week-end that his credibility depended on the Liberal's membership and many MPs expected to back down in return for some form of Government help for rural transport.

## Generating Board profit likely to top £100m.

BY MAX WILKINSON

A RECORD PROFIT of more than £100m is expected to be announced by the Central Electricity Generating Board for the last financial year. Sir Arthur Hawkins, the departing chairman, said yesterday that the profit—about three times the planned level—had been achieved by a combination of good management and luck. He strongly opposed any idea that the money should be spent on ordering a new power station at Drax, near Selby, in advance of the Board's need.

### Cold weather

"Our system of thermal efficiency reached a new record level, we produced more units from before, and we substantially reduced our spending on materials and services. "Luck, too, played its part. Even the cold weather came in on cue to boost our sales when demand for electricity was at its peak."

## Engineering union defects Left move for more pay

BY ALAN PIKE, LABOUR STAFF EASTBOURNE, May 5.

MEMBERS of the Amalgamated Union of Engineering Workers National Committee, which came out strongly on Wednesday against further wage controls against Phase Two of the Government's pay restraint policy, expires in the summer, put off a decision yesterday on the size of their next claim.

### Moderates' hope

Ministers and senior TUC leaders must now wait to see whether this week's stand against further wage restraint from the union prompts other union conferences to take similar decisions.

If it does the chances of a meaningful pay policy emerging from the TUC-Government talks will be very slender.

## Trade prices in U.S. up 1.1% again

By Jurek Martin, U.S. Editor

WASHINGTON, May 5. WHOLESALE PRICES in the United States rose by 1.1 per cent last month for the second consecutive month, once again because of higher fuel and food costs.

This is the sort of inflationary news that it will be argued, adds point to the President's anti-inflation programme unveiled last month. The Administration has raised its estimate of the underlying rate of inflation from a little under 6 per cent to about 6.5 per cent.

### Excluded

The price of fuels rose by 1.1 per cent during the month, but industrial commodities went up by a more modest 0.5 per cent—down two percentage points compared with March. If the fuel factor is excluded, industrial commodities rose by only 0.5 per cent.

## Ulster power men resist call to strike

BY KEVIN DONE AND ROY HODSON IN ULSTER

SUPPORT FOR the Loyalist general strike in Northern Ireland was fading by the end of the third day yesterday. Most sectors of industry and commerce were returning to normal working and managers were reporting up to 100 per cent turn-out of day workers.

### Security

Twenty-four hours of concern over whether the workers at the key Ballylumford power station would join the strike ended last night when the senior shop stewards said after a works meeting that they would maintain normal power supplies.

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LOMBARD

Savings trends: the unsolved riddle

BY ANTHONY HARRIS

ONE OF THE many pits which Mr. Dennis Healey fell into after...

Mini-budgets

The outcome was a whole series of disasters of the kind which...

This new thinking has certainly produced better forecasts...

The reason is that there are now two new factors in the equation...

So far as companies are concerned, we luckily have regular surveys...

TV Radio

Indicates programme in black and white.

BBC 1 6.40 a.m. Open University (UHF only)...

F.T. CROSSWORD PUZZLE No. 3,373

Crossword puzzle grid with numbers 1-23 and 1-27.

- ACROSS 1 Place curb on random test (4)...

- DOWN 1 Pay for driving ship (5)...

RACING

Lucent should fight off Irish challenge

CAPTAIN Ryan Price has always expected...

There the Findon fly fought on particularly good ground...

SALEROOM

Claret fetches record prices

AUCTIONS of Islamic works of art...

There were good prices at a Christie's record auction...

BY DOMINIC WIGAN

Lucent should fight off Irish challenge

Sure to be well suited by today's six berings...

Captains Mate, the mount of Geoff Lewis...

BY ANTONY THORNCROFT

Claret fetches record prices

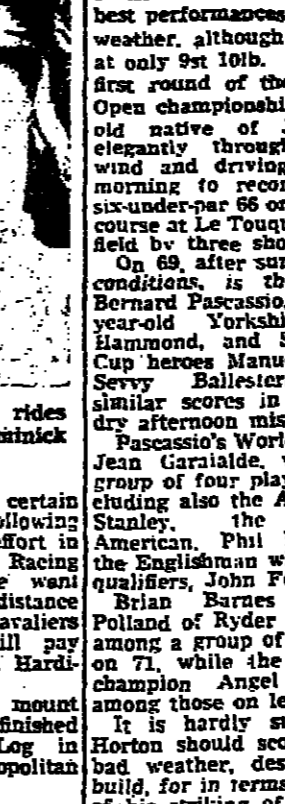
An antique Kirman lavers rug...

Another gold box, also from the mid-18th century...

GOLF

Horton battles wind and rain to lead in French Open

LE TOUQUET, May 5



Geoff Lewis who rides Captain's Mate, Dominic Wigan's nap.

Open in March, Horton has been one of acts with his putter...

BY OUR FIVE CORRESPONDENT

Sea threatens famous courses

TWO of the most famous golf courses in Britain...

APPOINTMENTS

Senior Board post at Fairey

Lord Grosvenor, a director of FAIREY COMPANY...

Mr. J. C. Dobson has been appointed managing director...

Mr. R. C. H. Wiles has been appointed as deputy chief executive...

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Joy 10 1975

AMERICAN NEWS

Nixon fails to allay criticism

Jurek Martin
WASHINGTON, May 5.
President Richard Nixon hoped that his television news with David Frost...

Saudi contribution to IMF facility will be less than \$4bn.

WASHINGTON, May 5.
THE INITIAL Saudi contribution to the planned \$10-billion facility increasing the resources of the International Monetary Fund (IMF)...

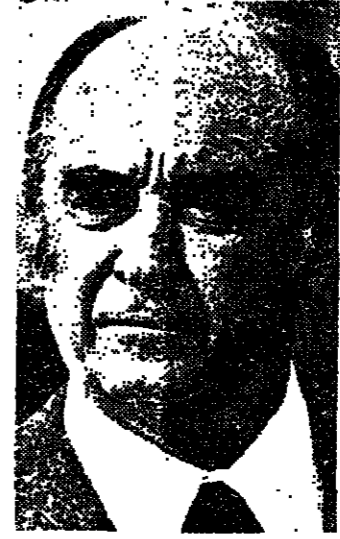
Imports take 20% of U.S. car sales

NEW YORK, May 5.
IMPORTS took a record share of the U.S. car market in April, according to figures just released...

MEXICAN POLITICS

A patchwork consensus breaks up

BY ALAN RIDING IN MEXICO CITY
FIVE MONTHS after he took office, the honeymoon period is over for President José López Portillo of Mexico...



President José López Portillo

Carter backs amendments to anti-boycott legislation

WASHINGTON, May 5.
PRESIDENT JIMMY CARTER has urged Congress to adopt amendments to the anti-boycott provisions of draft legislation...

OECD publications

- THE TREATMENT OF FAMILY UNITS IN OECD MEMBER COUNTRIES UNDER TAX AND TRANSFER SYSTEMS (April 1977)
THE ADJUSTMENT OF PERSONAL INCOME TAX SYSTEMS OR INFLATION (January 1976)
EVENUE STATISTICS OF OECD MEMBER COUNTRIES, 1965-1974

Hydro Quebec \$12m. river surveys

Hydro Quebec, the \$8bn, Quebec Government-owned power utility, is putting more resources into studies for the development of rivers running into Hudson Bay...

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Site 77, the sales managements of the following manufacturers will have permanent offices: Alfa Romeo, Audi N.S.U., Berliet, B.M.W., Chausson, Chrysler France, Chrysler Great Britain, Chrysler International, Chrysler U.S.A., Chrysler Spain, Fasa, Renault, Fiat, Fiat V.I., Heuliez, Lancia, Magirus Deutz, M.A.N., Mercedes, Metalurgia de Santa Anna, O.M., Pegaso, Renault, Saurel, Saviem, SEAT, Volkswagen, Volvo.

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OVERSEAS NEWS

RHODESIA

Guerillas 'detain 80 rival leaders'

BY BRIDGET BLOOM, AFRICA CORRESPONDENT

A STRUGGLE for power in the main guerrilla forces fighting against white-ruled Rhodesia, during which more than 80 senior guerrilla commanders have been arrested, appears to have reinforced the control of a group owing its principal political allegiance to Mr. Robert Mugabe, joint leader of the Patriotic Front.

Record £165m. trade surplus

OFFICIAL figures to be published to-morrow show a remarkable recovery in Rhodesia's balance of payments, which registered a surplus of some £40m., the largest since UDI in 1965, mainly because of a savage cutback in imports.

Gandhi bid to control Congress

JUST A month before elections to state assemblies are to be held, the Congress Party seems to be torn by internal wrangles and sharp differences over its leadership, with Mrs. Indira Gandhi, the former Prime Minister, making an unexpected bid for control of the organisation.

Gulf states lend \$1.5bn to Egypt

AN AGREEMENT was signed in Cairo to-day for a \$1.5bn loan from the Gulf Development Organisation (GDO) to Egypt.

Peres welcomes U.S. initiative

MR. SHIMON PERES, the Israeli acting Prime Minister, to-day welcomed the initiative by Mr. Cyrus Vance, the U.S. Secretary of State, to the effect that the U.S. has "suggestions on all the core issues" in the Middle East.

Poll doubts in Indonesia

JAKARTA, May 5. PRESIDENT Suharto of Indonesia is coming under increasing pressure to order fresh elections in some areas, following claims of widespread ballot-rigging in the general election on Monday, in which the Golkar movement, which the military government supports, retained its 62 per cent majority.

Pakistan arrests on eve of demonstrations

THE PAKISTAN Government to-day showed that it intends to take a firm stand against any further street agitation when police in Lahore arrested numerous supporters of the opposition Pakistan National Alliance including newly chosen officials.

Pakistan arrests on eve of demonstrations

ISLAHABAD, May 5. All nine members of the coalition of opposition parties put their signature to the charter, though there is clearly a split between them over tactics and policy.

WORLD TRADE NEWS

U.K. deficit on Soviet trade widens

BY DAVID WHITE

BRITISH exports to the Soviet Union fell slightly during the first quarter of 1977 by comparison with the same period last year while British imports, principally of raw materials, rose.

Brazil talks on future of major iron ore project

BY DAVID WHITE

BRITISH STEEL and other European and Japanese steelmakers are to take part in talks this week, depending on weather conditions in the region.

Only Italy angry after EEC steel price move

BY OUR INDUSTRIAL AND FOREIGN STAFF

ITALIAN steelmakers provided the only angry reaction yesterday to the EEC announcement of compulsory minimum prices for reinforcing steel bars.

Effort to stop display of pressmen held in Zaire

BY STEWART DALBY

FOUR EUROPEAN ambassadors joined forces in a demarche on senior Zairean officials here to-day in a bid to avert a potentially humiliating incident due to take place to-morrow, involving the public display of seven captured journalists, including one Briton.

Porvair signs four-year, £8m. contract

BY CHRISTOPHER DUNN

FORVAIR, U.K. manufacturer of breathable protective shoe upper material, has signed a major contract, worth £8m. over four years, with the Soviet Union.

France modifies inflation plan

BY DAVID CURRY

THE FRENCH export credit insurance agency, Cotacoe, is to modify its inflation compensation scheme by reducing protection against monetary fluctuation and by altering the index upon which compensation is based.

Racial deal in Latin America

Financial Times Reporter

AN \$2.5m. contract in Latin America for Racial Electronics was announced by the company to-day. The contract is for radio communications and associated equipment and has been placed with a Latin American Government.

Anglo-American battery deal

BY ANDREW TAYLOR

AN ANGLo-AMERICAN marketing and research agreement, which could lead to the development of a more efficient battery, was signed in London yesterday.

Ford plant for Sydney

BY JAMES FORTH

FORD AUSTRALIA plans to set up a \$482m. assembly plant in the Sydney suburb of Ingleburn. Work on the plant, which would assemble Falcon and Fairlane models, will start soon.

ON OTHER PAGES

International Company News: Hoechst financing plans Akzo first quarter 30/31 Farming and Raw Materials: Sugar pact doubts 33

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Handwritten scribble at the bottom of the page.

Joy 1250

# HOME NEWS

## Irish inventor wins a factory and £15,000 cash

BY OUR OWN CORRESPONDENT

THE INVENTOR of a storage container... has won a factory and £15,000 cash... The competition, launched in October, attracted 655 entries...

placed first in the competition to find the best industrial invention... The unit, of which nine have been sold, is manufactured by the Alval Engineering Company...

Two other entries won joint second place and will be offered free factories by the development corporation... They are a new method of applying kaolin powders to wounds...

The competition, launched in October, attracted 655 entries of which at least 30 per cent were thought to be impossible or impracticable... Three entrants were given a warning by the judges...

## Construction industry call for aid

By Michael Cassell, Building Correspondent

LEADERS of the construction industry are seeking a meeting with the Prime Minister in yet another attempt to enlist Government help in relieving the effects of the worst post-war building recession... Mr. Robert Willan, president of the National Federation of Building Trade Employers...

He told the meeting: "We want an end to the long series of frustrating and sterile discussions with the Government about the recession and what ought to be done to reverse it... The industry had become totally disaffected and disillusioned..."

## 'Salaries of top 100 down by half'

INFLATION AND the pay freeze applied by successive governments means that in real terms the income of the heads of nationalised industries has been slashed by half since 1972-73... Data says that apart from payments of about £800 permitted under the Heath Government's policy...

## British Vita invests £3m

BRITISH VITA is investing £3,000,000 in its Vitacon custom moulding operations at Middleton and Clayton, Manchester... When the first phase is completed by mid-summer the recent ten compounding lines will be increased to 13.

## Home building figures raise industry's hopes

BY MICHAEL CASSELL, BUILDING CORRESPONDENT

A BIG JUMP in house building activity in March has raised hopes that the industry might at last be starting the climb back to higher output levels... Estimates from the Department of the Environment yesterday put the number of homes on which builders began work during March at 22,400 against only 14,700 in the previous month...

The number of homes completed by contractors rose to 25,000 in March from 22,100 the previous month, but is still well down on the March, 1976, figure of 29,000... In the first quarter of this year, total housing completions were 6 per cent lower than in the preceding three months and 11 per cent less than the first quarter of 1976...

the remainder of the year. However, the lower cost of home loans—with the prospect of another cut on the way—could provide an important stimulus to developers considering an increase in their work... For the moment, the private sector expects starts to fall to about 145,000 this year against last year's 155,000—one of the most disappointing results of recent years...

## Gas, power tariff structure defended

BY RAY DAVIES

THE GOVERNMENT is resisting pressure for major changes in gas and electricity tariff structures... In a White Paper published yesterday, the Government made it clear that consumers must expect to pay realistic prices for their heat and power...

Energy Secretary, told the Commons yesterday that two important steps had been taken to help domestic consumers in time for last winter... The gas and electricity industries had agreed a code of practice protecting genuine hardship cases against disconnection and encouraging the spread of pay-as-you-go payment methods...

Gas and electricity prices should be at economic levels which reflect the cost of supply... encourage the best use of national energy resources and avoid public expenditure subsidies... But the Government, and the Department of Energy in particular, sees no justification for sweeping changes in the tariff structure to shield consumers from higher costs...

Consumers on supplementary benefit and family income supplement had also been helped with a 25 per cent discount allowable on one of last winter's electricity bills... But the set of replies shows that the Government is firmly against abandoning fuel cost adjustments and introducing flat rate tariffs... The Government's Reply to the Fourth Report from the Select Committee on Nationalised Industries and the other by the National Consumer Council...

## Holiday plans changed

BY ARTHUR SANDLES

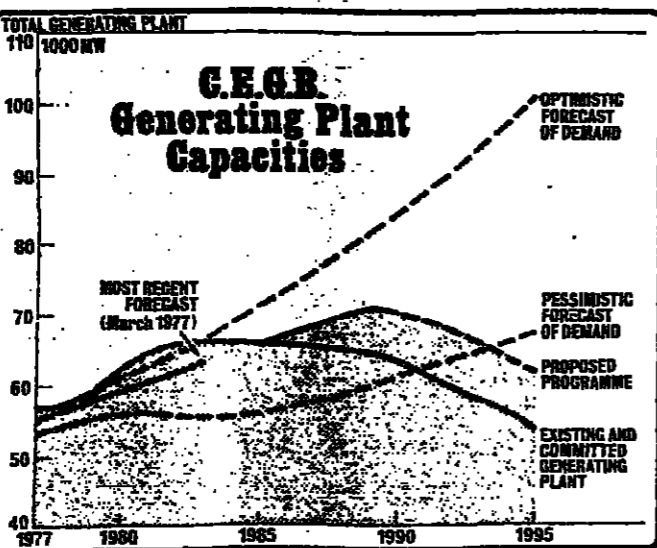
ABOUT 100,000 package tour customers have had their holiday travel arrangements changed over the past month as tour companies try to rationalise their bookings in what is proving to be a disastrous holiday season... According to the trade paper Travel News, "consolidations," a practice of merging under-booked holiday groups with each other, is widespread...

Estimates of the shortfall in holiday bookings compared with last year vary from 10 to 20 per cent... Many tour companies have been holding on in the hope that there will be a last minute rush of reservations... Now, as one charter airline pointed out last night, "some people's nerve is beginning to crack" and there is a rush to merge flights.

## CEGB now more optimistic about growth of demand

BY MAX WILKINSON

THE CENTRAL Electricity Generating Board's corporate plan for 1977 shows a somewhat more optimistic forecast for the growth of electricity demand than its previous estimates... The Board repeats the optimistic and pessimistic forecasts of electricity demand shown in last year's corporate plan... The Board says the programme, aimed at a stable base of electricity supply, will result in substantial capacity until the 1980s if the growth of electricity demand is maintained at the lowest forecast... The Board says it expects demand to grow at a rate between these two extremes... A continued reduction in manpower will be needed... Replacement of every 1,000mw of old plant by modern machines would displace about 600 workers, says the Board.



The optimistic forecast is based on an assumption of a growth rate of 3.3 per cent a year in the economy as a whole, and a slight rise in electricity's share of the useful energy market... This results in a forecast average growth rate for electricity consumption of 3.5 per cent a year, to reach 51,000 mw by 1985... The pessimistic forecast is based on a growth rate in the economy of 2 per cent a year and on electricity demand of only 1.5 per cent a year, leading to a maximum of 55,000 mw by 1985.

## Landowners urge rent rethink

CONTROLLED RENTS should be converted to "fair rents," the Landowners Association said yesterday... It shows a refreshing readiness to consider new ideas on letting by private landlords... However, it believes the Government must go further than its proposed, and re-examine the private landlords.

that fair rents should bear a whole question of security of tenure... The present stringent provisions are a major cause of landlords' unwillingness to let... Overall, it welcomes the paper... "It shows a refreshing readiness to consider new ideas on letting by private landlords..."



The idle, food loving city centre pigeons hung their crops in shame yesterday as their more useful cousins flew into action carrying urgent medical samples. The experiment, using pigeons with specially designed harness, started between Plymouth's Greenbank Hospital and the city's central laboratory. If successful lofts may spring up at other hospitals.

## Bankruptcy law change cuts receiving orders

BY OUR CITY STAFF

RECENT legislation increasing £5 to £50 for debtors' petitions the minimum debt required to support bankruptcy petitions... Figures published today in the official magazine Trade and Industry show that the change in legislation has had an immediate effect... The Insolvency Act 1976, which came into force on December 20, increased the minimum debt for bankruptcies from £50 to £500; the deposits required on bankruptcy petitions rose from last year.

## Accountants urge simplified system without delay

BY MICHAEL LAFFERTY, CITY STAFF

A SIMPLIFIED system of current cost accounting (CCA) should be introduced without delay, the English Institute of Chartered Accountants, Britain's principal accountancy body, has told the Morpeth Inflation Accounting Steering Group... It says this inflation accounting system is likely to be the most useful form of reporting for the majority of users of accounts... The Institute also says that the much-disputed supplementary statement comparing a company's performance with changes in the Retail Price Index should be dropped for "reasons of speed and simplicity..."

## Scots tax-raising powers may split U.K. companies

BY RAY PERMAN, SCOTTISH CORRESPONDENT

A SCOTTISH Assembly with land would add to industry's tax-raising powers could create competition between companies on either side of the border and so undermine the unity of the U.K... Mr. Alan Devereux, vice-chairman of the Confederation of British Industry in Scotland, said yesterday... He told a conference in Glasgow that higher taxes in Scotland would add to industry's costs and further discourage investment.

City	Dep. London	Arr. City	Time
Portland	14.00	18.05	
New York	11.00	12.55, 16.30	13.35, 15.30
Detroit	10.40	15.20	
San Francisco	13.05	16.05	
Boston	10.40	12.45	
Seattle	14.00	15.35	
Honolulu	13.35	22.35	
Washington	12.20	15.40	

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LABOUR NEWS

Provincial journalists obey strike call

BY OUR LABOUR STAFF

JOURNALISTS AT a majority of provincial newspapers in England and Wales appeared to be obeying a union instruction for a 24-hour strike which came into effect late yesterday.

Call to strike over Gibraltar 'lock-out'

BY DAVID CHURCHILL, LABOUR STAFF

A NATIONAL one-day official strike of all Britain's 230,000 clerical civil servants was called yesterday at the annual conference in Southport of the Civil and Public Services Association.

Angry doctors want explanation for leak of salary agreement

BY STUART ALEXANDER

AN ANGRY British Medical Association yesterday demanded from the Government an explanation of how part of its latest pay agreement was leaked to the magazine Pulse and published on its front page before the details of the award had been given to the negotiators.

North Sea pilots agree to talks with Bristow

BY OUR LABOUR STAFF

STRIKING North Sea helicopter pilots in Aberdeen have agreed to meet Mr. Alan Bristow, chairman of Bristow Helicopters, to discuss a settlement to a row over a sacked colleague.

Port Talbot plea to Chapple

BY CHRISTIAN TYLER, LABOUR CORRESPONDENT

MR. FRANK CHAPPLE, general secretary of the Electrical and Plumbing Trades Union, will be asked on Monday to make official the six-week strike by electricians that has shut the British Steel Corporation Port Talbot Works in South Wales.

900 laid off over dispute

BY DAVID CHURCHILL

A DARLINGTON, Staffs., factory refusing to service key equipment for two weeks.

Scrap social contract, urge S. Wales miners

BY OUR LABOUR STAFF

REPRESENTATIVES of miners for a phased return to free in South Wales called yesterday for the social contract to be scrapped and urged the Government to increase spending.

Concorde redundancies row may cause strike

BY OUR LABOUR STAFF

ENGINEERS AND fitters working on Concorde warned yesterday that unless there was agreement on severance pay for those workers to be made redundant at Filton, near Bristol, industrial action would be taken against the British Aircraft Corporation.

Big wage rises sought by knitwear workers

BY OUR LABOUR STAFF

ALLS for substantial wage increases form a large block of resolutions for the annual conference of the National Union of Hosiery and Knitwear workers at Southport next month.

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In applying please specify the position you wish to be considered for and enclose your curriculum vitae and supporting documents with names for two references and a summary of your Ph.D Thesis. Please reply not later than June 30, 1977 to:

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By Ray Dafter

NORTH SEA OIL REVIEW

BY RAY DAFTER

# Quickening pace of output

AINST the backdrop of the timing controversy over Ekofisk blow-out, the Government and offshore operators have unveiled a series of developments which highlight the quickening pace of North Sea oil production.

The Department of Energy's own Book has set the scene, estimating an increase in the rate of oil discoveries by 310m. tonnes to 2.5bn. tonnes—1.5 times as much as in the 1970s. This is almost equivalent to reserves in British Columbia's Forties Field.

A reappraisal of seismic information has led Shell and other operators to upgrade forecasts for their Dunlin Field, which is due on stream in 1978. Estimates of peak production have risen from 100,000 barrels a day to 150,000 b/d while recoverable reserves have been added from 425m. barrels to 1.1bn. barrels.

The Thistle Field, operated by the British National Oil Corporation's BODL subsidiary, is another discovery now looking attractive. The peak production rate has been amended to 150,000 b/d. It is the reserves figures which must give the Thistle operators particular cheer, thanks to an extensive drilling programme in the past 18 months. Recoverable reserves are now estimated at 366m. barrels, up from 257m. barrels a year ago.

Then Dr. Armand Hammer, chairman of Occidental Petroleum, breezed into London a week with news that the new field's production rate is to be increased, possibly to 150,000 b/d which will be reached this summer, to nearer 200,000 b/d. The Occidental group has already started discussions with the Department of Energy and a formal announcement could be made within the month.

Occidental's Piper pipeline will feature in the development plans now being finalised for the Taran Field. The development of Continental's Murchison Field is also ahead although, because of field straddles, the U.K./Irish median line, the production scheme must be ratified by both Governments, an added complication to an already difficult project.

Amoco has also fallen in line with the Government's participation proposals. Through the agreement, signed this past week, has probably come too late to allow the company to pick up the exploration with the widespread criticisms round. The group has been and the enhanced public government assurances awareness of the inherent risks involved in offshore oil production should safeguard downturn activities in the U.K.

But whatever the oil industry's wishes, the influence of Ekofisk will stay. Government and environmentalists and vociferous critics of big business will be watching even more closely the way offshore operators develop and run their fields. Safety and anti-pollution measures will feature prominently, much more than they have in recent years. So Mesa may have chosen an ill-opportune moment to press production until companies that offshore loading hoses can have made proper provision for using or distributing associated gas.

Not that the Beatrice development is likely to be affected on either count. The Mesa oil has relatively little associated gas. And its peak production is likely to come at a time when some of the existing commercial fields may be past their prime in terms of daily output. Furthermore, the Department of Energy's latest energy policy review presented to the National Economic Development Council hints that oil companies will be allowed to produce crude from their fields as fast as possible, at least until the late 1980s.

However, the way Beatrice is developed is more problematical. For a start, it is bound up with all the environmental issues that are now being given a full airing. Lying close to land, just 15 miles from the coast and in the middle of inshore fishing grounds, the field is going to be the subject of close environmental and anti-pollution scrutiny even before the Ekofisk blow-out.

It seems that, at the very least, Mesa may be required to operate its own firefighting and oil skimming vessels close to the producing structures. Whether Mesa and its partners will be allowed to use offshore loading facilities or whether the Government will insist on a pipeline to shore is still unclear. Both methods have their advantages—and their problems. The North Sea industry has already gained enough experience to know that pipelines can be dragged out and position by ship anchors and

that offshore loading hoses can become damaged. But the way quality of the oil may be the over-riding influence.

It is also possible that the method will be affected by Cromarty Petroleum's plan for a £150m. oil refinery at Easter Ross. This plan will go before the Highland Regional Council's planning committee on June 8. By then the planning committee will have heard from Mesa about its development plan. Mesa is due to present its ideas at a meeting on May 18.

The local fishing industry is not only concerned about the pollution threat and disturbance to its traditional fishing grounds; it is also worried about fish using the haven of platform safety areas to "hide" from the fishermen. It is an established fact that fish are attracted to the water around the base of offshore structures.

And Mesa appears to be planning to instal at least four steel platforms in the Moray Firth. These will be small by North Sea oil standards—more akin to southern gas field units. But in order to handle the peculiar crude of the Beatrice Field—and recoverable reserves are estimated to be between 350m. and 450m. barrels—the Mesa group will need a good deal of topside equipment. As a result, it is likely that the platforms will be positioned in pairs.

Assuming that the Government agrees to the licence change governing the Buchan Field, British Petroleum—the new operator—is likely to choose a floating production system, at least in the early stages.

A converted semi-submersible rig will probably drill development wells through a steel template positioned on the seabed. It is understood that this template, which could be in position in July or August, will accommodate six wells. There are also provisions for two satellite wells to be drilled.

In this way development drilling could begin later this year, giving a production start-up date early in 1979. The capital cost of this initial production system might be as low as \$150m., a modest outlay by North Sea standards.

Much needs to be learned about Buchan, however. It is a baffling structure with apparently poor producing characteristics. But so far only the main column of oil-bearing rock (some 1,500 feet to 1,800 feet thick) has been tested. Unofficial industry reports put the recoverable reserves of Buchan at between 125m. and 180m. barrels although this range could be improved with further drilling. There are known to be a number of interesting prospects around Buchan, both in block 21/1 and 21/6. BP is obtaining a stake in both blocks in a deal which seems to please all sides. BP is gaining access to more oil conveniently close to its Forties pipeline, which it needs for its refining, oil products and chemicals business in the U.K. next few weeks.

**LATEST OFFICIAL RESERVE ESTIMATES FOR UK COMMERCIAL FIELDS**

FIELD	OPERATOR	PROVEN RECOVERABLE RESERVES (m. barrels)	PEAK PRODUCTION RATE ('000 barrels/day)
<b>ON STREAM</b>			
Argyll	Hamilton Bros.	513	50 (40)
Auk	Shell/Esso	58 (51)	50 (40)
Beryl	Mobil	513	98
Brent	Shell/Esso	1,686 (1,429)	462 (442)
Forties	Esso	1,739	462 (402)
Montrose	Amoco	147	45
Piper	Occidental	623	341 (239)
<b>UNDER DEVELOPMENT</b>			
Claymore	Occidental	418 (366)	170
Cromarty	Shell/Esso	147 (161)	46 (44)
Dunlin	Shell/Esso	586 (425)	150 (100)
Heather	Esso	147	50
Murchison	Esso	1,024 (953)	332 (301)
Stafford	Cotec	430	84 (60)
<b>(U.K.)</b>			
Thistle	BODL (BNOC)	557 (366)	203 (177)

Note: Figures in brackets are 1976 estimates. Source: Department of Energy figures based on operators' estimates.

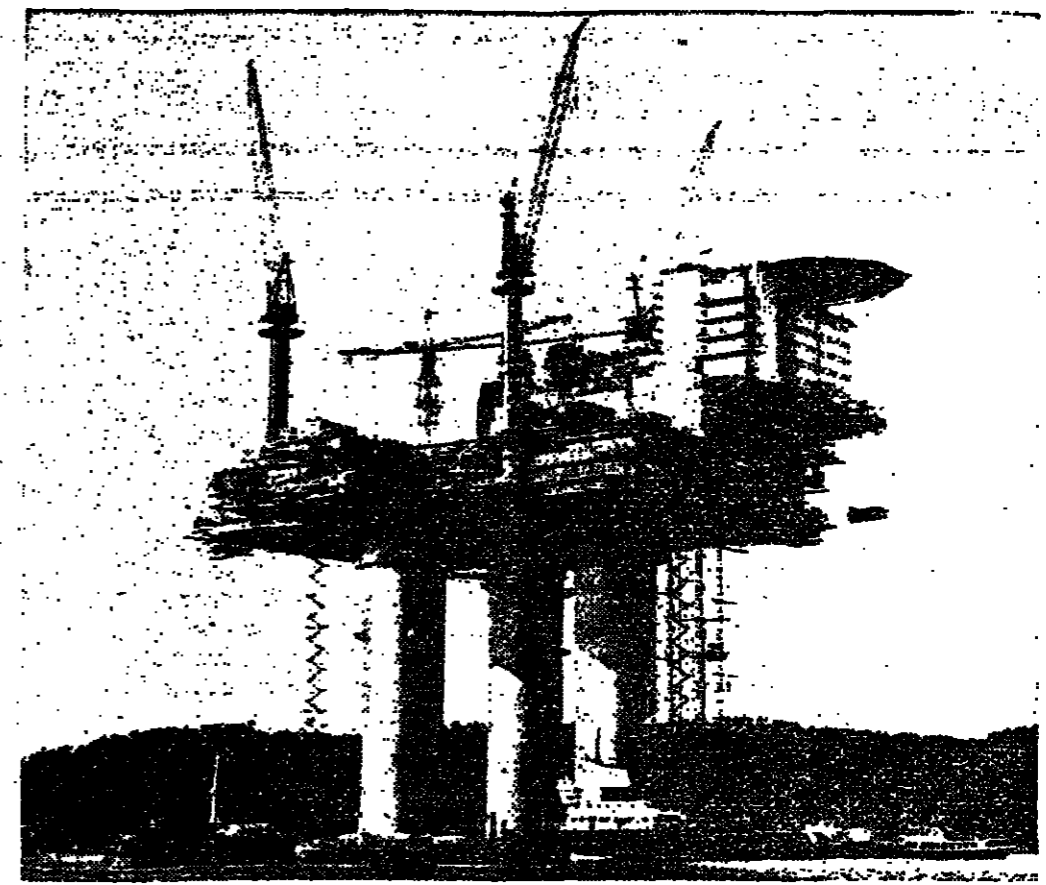
ahead with its development plans. In recent days the group has had informal discussions with Dr. Dickson Mabon, Minister of State for Energy, and officials at the Department of Energy to outline the scheme for bringing the attractive field on stream.

Within the next few weeks Mesa should be in a position to submit its formal development application, the so-called Annex B of the Petroleum and Submarine Pipelines Act's Model Clause Fifteen.

The scheme, and the way it is reviewed by Government, will be watched with interest by the offshore industry. For not only will it be affected by the Ekofisk considerations, but it will also mark the beginning of a new phase in British North Sea oil development.

Discovered in the past nine months, the field is the first of the post-1975 discoveries to be considered in the light of any new Government depletion policies. Existing commercial fields and pre-1975 finds are being developed on the basis that the U.K. economy needs a rapid and sustained build-up of oil production into the early 1980s.

In theory, Mr. Anthony Wedgwood Benn, Energy Secretary, could put a brake on the Beatrice production profile for one of two basic reasons. He might want to regulate North Sea oil production to match domestic consumption; in this way output would be sustained for the maximum length of time. He might also hold back oil



Stafford A, the world's largest oil production platform, which was towed out to the field this week.

The companies which are selling out part of their interests—City Petroleum, CCP North Sea Associates and Gas and Oil Acreage—can still look forward to some of the Buchan profits.

The companies are left with a 50 per cent. stake in the remainder of the licence (outside of the Buchan and North Sea structures) as well as a 50 per cent. retained interest in net profits from Buchan production. And they also see a 54 per cent. stake in Buchan, undertake two further exploration wells, the first of which is due to be started on block 21/1 in the next few weeks.

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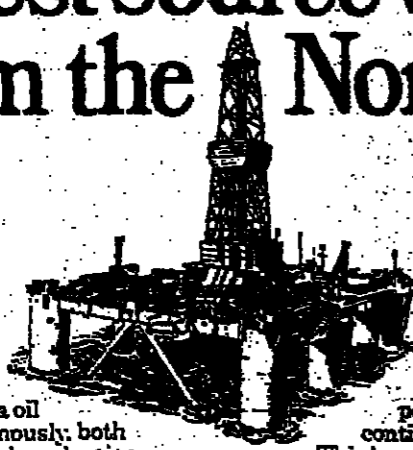
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2. Tender documents will be available for sale from 5th May, 1977 against a non-refundable fee of DH.1600 by the Director of the Zoological Garden in Al Ain and/or by Styria-Consult, Humboldtstrasse 19 Graz/Austria. Telex 3-1987 Pintar-A.
3. Offers must be completely priced in all branches of the work. Partly priced offers will not be accepted.
4. Offers should be accompanied by a 5% Bank Guarantee valid for ninety days.
5. Offers should be submitted in a sealed envelope to: H.E. The Chairman, General Projects Committee, P.O. Box 12, Abu Dhabi, U.A.E. not later than 10.00 a.m. on 28th June, 1977.

National Zoological Garden Al Ain—Abu Dhabi O. J. Bulart

SYRIAN STORING & DISTRIBUTING COMPANY PETROLEUM PRODUCTS "SADCO" No. 3491/32/19 Date: 24th April, 1977 Advertisement of a Tender of Top Urgency No. 6

- 1) Price to be quoted according to the official schedule of prices of the Ministry of Petroleum and Mineral Resources, Damascus.
2) Delivery of quantities according to programme detailed in "Cahier des Charges" relative thereto which is obtainable from Contracts Department in the Finance Directorate—Hadjrat, Damascus.
3) Offers are to be submitted to the Registration Office of the General Management of the Company at: Adawi Street, Ministry of Petrol Bldg., Fifth floor, Damascus.
4) Last date for acceptance of offers is on Saturday 21/5/1977 at 14.00 hours; and then disclosure will be on same date at 14.30 hours.
5) Fine for delay in the temporal programme defined in the "Cahier des Charges" at 1/100 (one per cent) per day of value of one shipment.
6) Offers are valid for 5 days effective from date of disclosure of offers.
7) Deposit: Bid Bond at 2% offers value of a confirmed Bank Guarantee subject to fiscal stamp (less at 0.2% of total value of the Contract and to be borne by the seller.
8) The final award will be confirmed by a Contract concluded and signed by both contracting parties, subject to fiscal stamp (less at 0.2% of total value of the Contract and to be borne by the seller.
9) Upon submission of offer to the Company, the bidder is considered to have accepted the General and Special "Cahier des Charges".
10) Any offer not complying with the above mentioned conditions will be disregarded.

SYRIAN STORING & DISTRIBUTING CO. PETROLEUM PRODUCTS "SADCO" No. 3489/32/19 Date: 24/4/1977 Advertisement for Call of Offer No. 6

- 1) Deposit: Initial deposit 2% (two per cent) of offer value. Final deposit 5% (five per cent) of award value offered by a confirmed Commercial Guarantee or via a certified cheque.
2) Total Delay Penalty 1/100 (one per cent) of total value for each day of delay.
3) Delivery at a shortest possible date.
4) Validity of Offer: 60 days from date of disclosure of offers.
5) Submission of offer: Offers will be accepted until the end of the official working hours of WEDNESDAY 17/5/77.
6) Disclosure of Offer: Offer will be disclosed at 00.00 hours of Thursday 18/5/77.
7) Price obtaining Cahier des Charges: Cahier des Charges for Technical Specifications and Conditions may be obtained from S.A.D.C.P. Finance Directorate, Contracts Dept. Hadjrat square, Damascus.
8) Delivery of Offer: Offers must be delivered to S.A.D.C.P. General Management, P.O. Box 12, Abu Dhabi, U.A.E. in two envelopes, one for financial offer, the other for the technical offer and these two envelopes to be put into one envelope, written thereon the subject and number of tender.
9) Any offer not complying with the above conditions may be disregarded.

COMPANY NOTICES

EDGAR ALLEN, BALFOUR LIMITED

NOTICE IS HEREBY GIVEN that the Registrar of Companies has received from Edgar Allen, Balfour Limited, a copy of the Memorandum and Articles of Association...

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LEGAL NOTICES

No 80168 of 1977 In the HIGH COURT OF JUSTICE Chancery Division Companies Court. In the Matter of GREYS RECYCLING LIMITED and in the Matter of the Companies Act, 1965.

NOTICE IS HEREBY GIVEN that a Petition for the Winding-up of the above-named Company by the High Court of Justice was on the 20th day of April 1977 presented to the said Court by KEARLEY & TONGUE LIMITED whose registered office is at P.O. Box 187, Alura Square, London, E.C.4, a creditor, and that the said Petition is directed by the High Court to be heard on the 23rd day of May 1977 at 10.30 a.m. in the Court sitting at the Royal Courts of Justice, Strand, London W.C.2, and any creditor or contributory of the said Company desiring to support or oppose the making of an order on the said Petition may appear at the time of hearing, in person or by his counsel (for that purpose) and a copy of the Petition will be furnished by the undersigned to any creditor or contributory of the said Company requesting such copy on payment of the regulated charge for the same.

I, F. BAYLIS, of 71, Chancery Lane, London, W.C.2, A.A., Solicitor.

NOTICE TO HOLDERS OF BEARER SHARES

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Entertainment Guide

OPERA & BALLET THEATRES OPEN AIR, Regent Park, AM 7.45. HENRY VIII, 14th July, 14th May. HENRY VIII, 14th July, 14th May. HENRY VIII, 14th July, 14th May.

THEATRES ADOLPHI THEATRE, 01-836 7710. LONDON'S BEST NIGHT OUT. LONDON'S BEST NIGHT OUT. LONDON'S BEST NIGHT OUT.

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HOME NEWS

Enterprise Board examines four different roads for Leyland

BY ARTHUR SMITH THE NATIONAL Enterprise Board is examining the British Leyland review of car operations before making a recommendation to Mr. Eric Varley, the Industry Secretary.

OPTION 1 This strategy, which on Leyland's assessment comes out top on market share, employment and profitability, would give the company a full range of vehicles ranging from the new replacement Mini through to the luxury specialist saloon and sports cars.

OPTION 2 Under this strategy Leyland would make a controlled withdrawal from the lower end of the market, abandoning both the 1250cc Mini replacement programme and the proposed new middle range car.

OPTION 3 This alternative would again favour the specialist cars and involve a curtailment of investment on vehicles in the lower ranges. The Mini replacement project would go ahead but with less investment and lower production capacity.

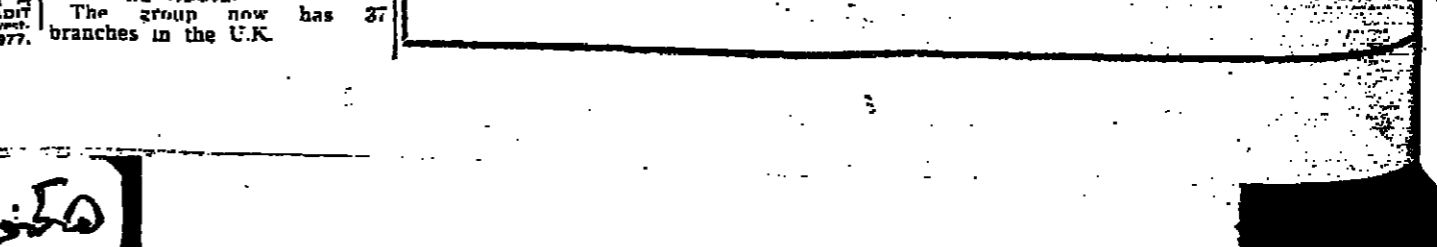
OPTION 4 This alternative would again favour the specialist cars and involve a curtailment of investment on vehicles in the lower ranges. The Mini replacement project would go ahead but with less investment and lower production capacity.

Staveley complex partly reopened A SECTION of the Staveley Chemicals complex, Chesterfield, closed early this year after it was discovered that some workers had contracted a mild form of skin disease, has reopened. The disease, which seriously afflicted people in Seveso, Italy, after a major leak from a chemical plant there, which the British Steel Corporation and the National Coal Board each hold a 45 per cent stake, has overhauled aspects of the plant which had previously brought workers into contact with chemicals resulting in a mild form of the skin disease.

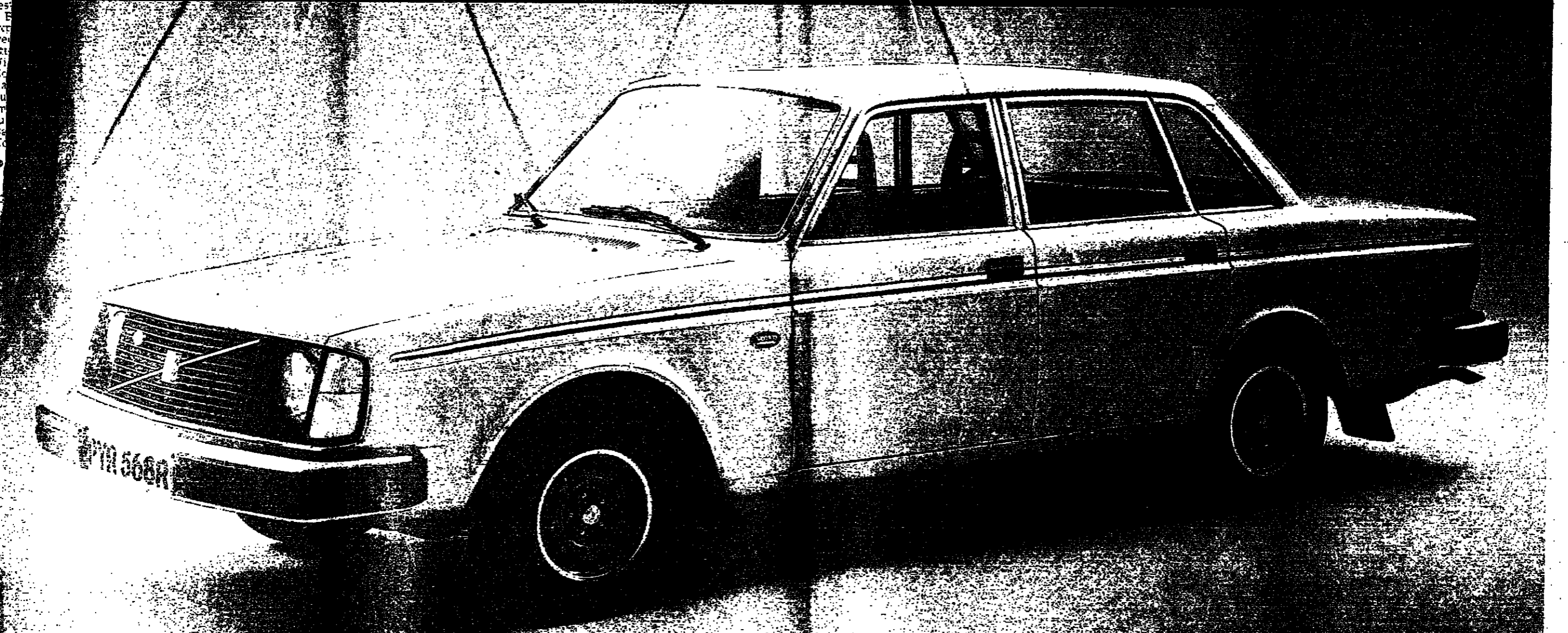
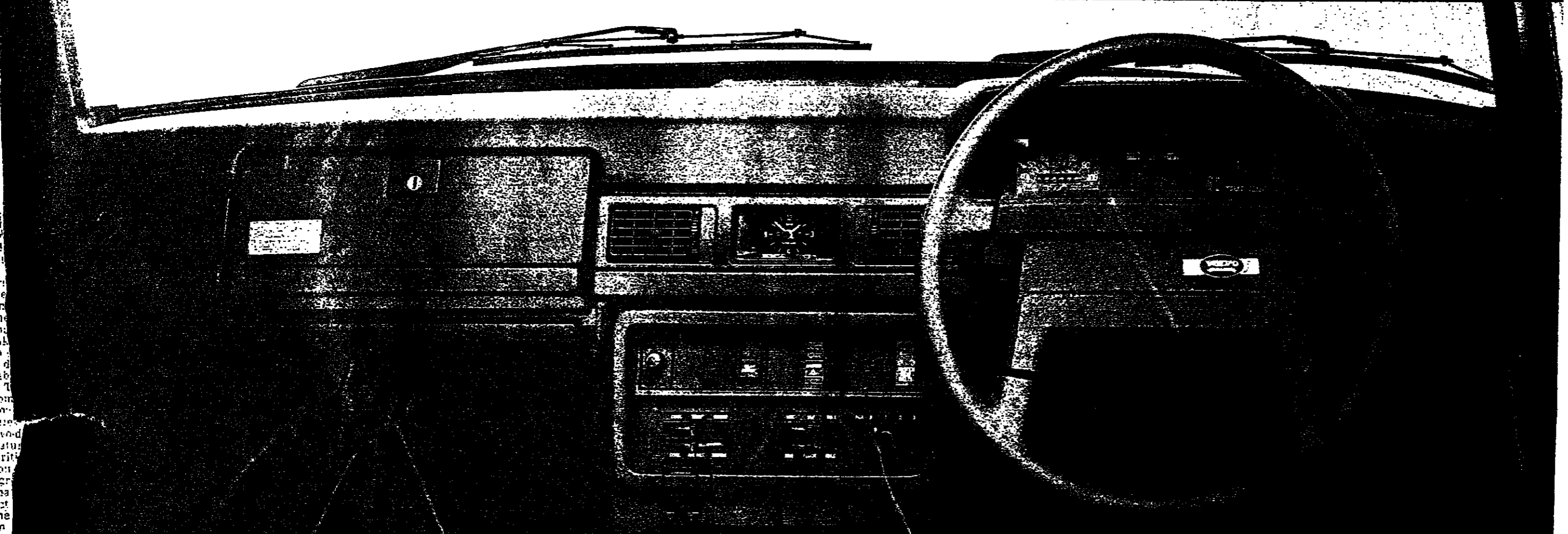
Technical team to aid company performance A SMALL full-time team to help medium-sized British industrial companies make the best use of technical advances has been set up by the Council of Engineering Institutions. The aim is to make an effective contribution towards improving industrial performance, the council said. It has set up the team under the auspices of its committee on creativity and innovation.

New branch for Citibank Trust CITIBANK TRUST, a consumer finance company, has opened a branch in the centre of London at its U.K. headquarters building at 336, The Strand. The move is part of the 1977 expansion plans of the group, which will concentrate on direct lending to individual clients at its Strand headquarters. The group now has 37 branches in the U.K.

HIGGS AND HILL are proud to announce that today Mr. R. Leigh-Pemberton, Chairman of National Westminster Bank Limited, will be topping out the Bank's new Management Services Centre now under construction in London. This vast project is on programme and has achieved a rate of construction believed to be one of the fastest in the United Kingdom. Excavation work carried out in the first six weeks involved the removal of 12,000 cubic metres of material. The main structural frame was completed in twelve months and required the placing of over 50,000 cubic metres of concrete and 5,600 tonnes of steel reinforcement. In total the turnover for the first sixteen months was over £21 million.



HIGGS AND HILL LONDON - LEEDS - COVENTRY - BRISTOL - MANCHESTER JAMAICA - ST. KITTS - FRANCE - TRINIDAD SAUDI ARABIA - BAHRAIN - QATAR



# VERY FEW CARS ARE BUILT LIKE A VOLVO VERY FEW VOLVOS ARE BUILT LIKE A VOLVO

Volvo is 50 years old.  
To celebrate we've made a limited edition of 750 anniversary cars.  
Each one in metallic silver. With a unique specification that includes a sun roof, tinted

windows, anniversary emblems and blue plush upholstery. As the ultimate endorsement, the President of Volvo's signature is engraved in a solid silver plaque on the dash.  
The manual version will cost £5,325.

The automatic, £5,595. Take a look at one in your Volvo showroom this week.  
We're confident a car that's taken half a century to build is worth half an hour of anyone's time.



For details and address of your nearest Volvo dealer write to: Volvo Concessionaires Limited, Lancaster Road, Cressex Estate, High Wycombe, Bucks. HP12 3QE. Telephone: (0494) 33444.

Original 50

Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

COMMUNICATIONS

ITT gains in PABX market

ITT Business Systems has received the first three U.K. orders, worth approximately \$650,000 in total, for its new private electronic telephone system, the Unimat 4080.

The touch of one coded button. To call numbers not listed in the abbreviated list, the user is provided with a push-button pad which also saves dialling time.

Filmstrip made easy

THE advantages of filmstrip presentation—particularly the low cost of software when large numbers of the particular presentation have to be made throughout an organisation—are further enhanced by the latest Bell and Howell Filmosound 35 unit.

Long phone numbers on one button

POST OFFICE approval is awaited on an automatic dialling unit from Sinton Automation, capable of being attached to existing PAX or PABX equipment.

TELEVISION

Advent of the big screen

FOUR TIMES the area of the largest colour TV now on the market, a five-foot diagonal screen set developed over the past year or more by Zygmia, has no equivalent anywhere in the world and will be projected exclusively by patents, according to the company which has been showing the prototype of the big TV in London this week.

OFFICE EQUIPMENT

Speeds the dictation

AT THE World Processing Exhibition (opens May 10, Guildard Hotel, London) Lanier Business Products Inc. will launch a new line, a system which enables three executives to dictate to a single point.

ELECTRONICS

World lead in testing

FAIRCHILD this week claimed that it had the world lead in increasingly important area of testing complex electronic devices, such as the semiconductor memories and the tiny computers now being used in large numbers in a whole variety of control and process equipment.

LUBRICATION

Maintains flow of oil

A METHOD of lubricating is replenished automatically from a remotely located reservoir. The oiler has a glass body which makes it easy to keep an eye on the lubricant level.

HANDLING

Fills kegs and drums

ORIGINALLY DESIGNED as a convenient method of showing the company's packaging equipment at exhibitions, a drum filling unit attracted so much interest that Bul Systems is now producing it for manufacturers.

In Europe alone, the company has installed some 225 test systems and has reinforced its support staff so that immediate aid is available in case of problems.



A friendly reliable service with GKN Bars and Sections

GKN (South Wales) Ltd. Tel. 0222-33033

MATERIALS

Tapes will not produce chlorine

WHERE contractors are working with stainless steel components, especially those which will at a later stage be subjected to temperature cycling, adhesive tapes and cloths can be used which will present no corrosion danger should they be overheated or buried if accidentally left behind in the structure.

INSTRUMENTS

Finds cable faults

FULLY portable instrument designed to remove the tedious task of cable testing has been put on the market by L-Pro Systems (Electronic) of 362a Spring Road, Sholing, Southampton (0703 440611).

Four-wheel drive for fork truck

DEVELOPED BY Sambrom in the U.K. and representing a further increase in the British content of this French company's machines, is a four-wheel drive version of the AM252 2-ton unit.

Oil overflow restrained

A BRITISH platform design company, Submerged Buoyant Structures, of Cobham, Surrey, is offering an idea to minimise the effects of a well blow-out, as experienced on Ekofisk.

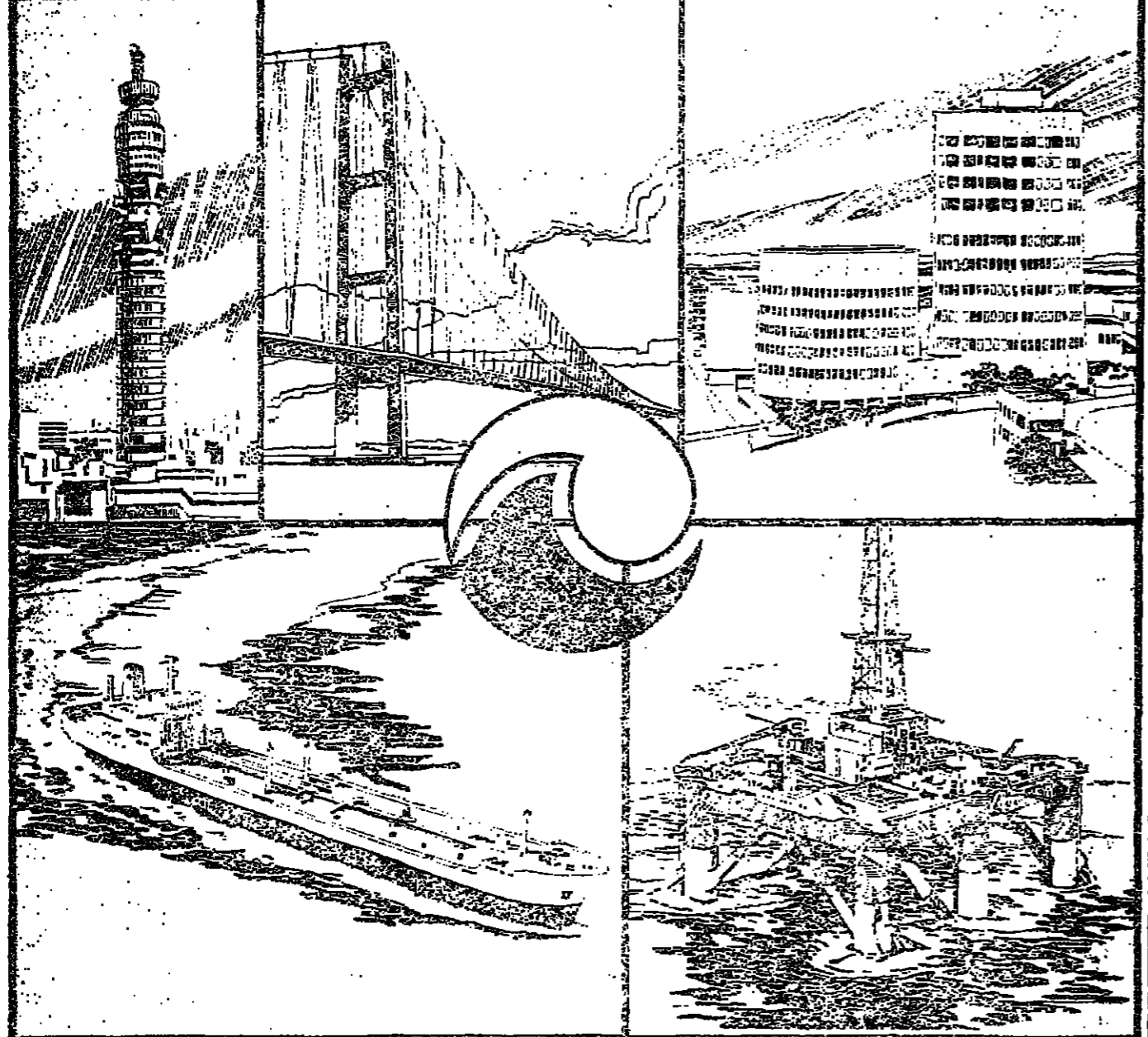
Conveyor can bend

A PORTABLE conveyor track which can be bent round curves, and can handle packages weighing up to 100 kg, with a bulk exceeding one cubic metre, has been launched by Flexveyor Products, Unit 3, Amington Industrial Estate, Tamworth, Staffs. (08275 1826).

Light fibre connectors

CLEARLY hoping that their design will make the basis of a standard for optical cable connectors, Plessey has revealed a prototype design of a six-way connector that introduces a loss of about 1.5dB per fibre.

AERODYNAMICS



HYDRODYNAMICS

How to minimise your risk

Winds, waves and currents can have expensive and disastrous effects. Naturally, you'll want to anticipate these. At the NMI, we'll show you what happens by using a model. And then we'll help you stop it happening.

The NMI was formed in July 1976 to continue, and expand, the National Physical Laboratory's 60 years of industrial research into engineering aerodynamics and hydrodynamics.

a circulating water channel, 2 manoeuvring tanks and 8 wind tunnels. At Hythe, the NMI has a 200 tonne coaster, several support craft and a large number of seabome data-gathering systems.

Find out more Whether your problem is ship performance, offshore structures, controlling smoke from factory chimneys or producing wind-free shopping precincts, consult the NMI. Start by writing for further information from James Dawson, our Commercial Manager at the National Maritime Institute, Feltham, Middlesex TW14 0LQ. Or ring him on 01-977 0933 ext. 5005.



Form for requesting information from NMI, including fields for Name, Company Address, and Area of Interest.

You can win the Power Game

with a Lister generating set from 2.75-175 KVA. Send for full details to:



R. A. Lister Power Plant Ltd., Thrupp, Stroud, Glos. GL5 2BW. Tel. 0453 5166. Telex: 43559.

Advertisement for Sovereign Size Jubilee Gold Piece, featuring a gold coin and a list of features like 'Solid 9ct Gold, Hallmarked' and 'Superb proof-like finish'.

Application form for the Jubilee Gold Piece, including fields for Name, Address, and Signature.

# FINANCIAL TIMES SURVEY

Friday May 6 1977

# Electronic Components

Heavily dependent on imported technology for the survival of its electronics industries, Europe is seeking the best solutions for the future which may come from matching U.S. innovation or outstripping the U.S. in applications of new electronic components.

A RECENT publication prepared by the Central Office of Information and issued as a reference pamphlet by the Ministry of Industry, has singled out the electronics industry as having become one of the most important sectors of British industry. Its importance stems from its size, output and export performance, but also from the vital contribution it makes to many other key branches of the economy.

Of the key devices which make electronics possible — components — the report says requirements in Britain have emphasised the need to maintain a capability within the U.K. for the production of solid-state (transistor-type) devices and the development of micro-electronic technology and Government support is given to achieve this aim.

Those responsible for this support within Government and Government/industry organisations can hardly be happy at the outcome of their efforts at a time when manufacture and export from Britain has never been so attractive. In components, during 1976, the trade balance showed that the adverse trend was worsening at a rate of over 50 per cent. annually — a situation that no advanced country can continue to accept.

Poor performance in components dragged the whole of the electronics industry into the red. After the small favourable balance of 1975, first for our years, there had been hopes of major contributions

from this sector. It is only fair to point out that also responsible for the adverse balance in general electronic equipment trading of £220m. was the computer sector where the deficit worsened by a depressing 143 per cent. This is a relevant statistic to bring in since arrivals of components of all types in Britain in 1976 amounted to just over £200m. while those of computers and related units were around £421m. A large proportion of what goes into a modern computer are components, some advanced, many run of the mill, and it would be no exaggeration to say that while the apparent deficit in 1976 trading in components was close to £115m, if account is taken of the arrivals of computing and control equipment, the trade deficit was probably double that figure.

Admittedly there are components many electronic equipment builders use that are not obtainable in Britain, or if they were, would not necessarily be favoured by the latter. ICL has put its component peripherals exact figure for the EEC was imports at around the £40m. mark, of which components of Commerce, it looks as if the 1975 figure of a \$1bn. deficit in computing equipment was repeated for 1976.

There is thus not only a vast outpouring of components from the highly automated plants of the U.S., but also a vast outpouring of equipment incorporating masses of these components with a rate of growth such that whatever other advanced countries do, apparently they can never catch

up — Japan being the sole that of the world market, with an 80 per cent. growth in the accounting period just ended and one of 70-75 per cent. anticipated for the current period. The company is exporting 50 per cent. of its output and, says Derek Roberts, who has led the company's ventures into advanced electronics over the past ten years or so, much of the improved health of the components and industries should be accounted for by volume substitution could be very dangerous to pursue in a country where the industries at the receiving end do not command a world market both by innovative power and by volume

feeling that far too much of the work being carried on in the various plants set up for component production in Britain has little added value content. Where this may lead is implicit in the fact that, for instance, America's positive trade balance in computing equipment, expressed as part of the "business machines" category in 1976 — was just

This is not to say that nothing is being done to try to reduce some of the backlog in those areas where a command of the technology is vital. Mullard at its Southampton plant has a whole new wing devoted to the most advanced large-scale integrated components and will ultimately

indigenous industry can be attributed to Government intervention. Admittedly it is on nothing like the scale of Japan where over \$300m. will be spent over a five-year period on that country's very large-scale integration project, or of West Germany. But discussions are in progress to increase U.K. Government support very substantially from the levels (in terms of purchasing power) of the first support granted when some 15 years or so ago, £5m. was split between four companies.

Government support for development is imputed in large part by Plessey for its growth in its integrated circuit manufacture and sale which has consistently outstripped

when it is remembered that Intel spends nearly 11 per cent. of its income on research and development against 6.6 per cent. by IBM.

Another potent reason for Government support is that in Japan, W. Germany and the U.S., investment in semiconductor technology is being seen as a way of getting leverage on equipment and systems companies.

This is what much of the Japanese VLSI programme is about. At the same time, Amdahl with the support of Fujitsu and Itak with that of National Semiconductor, are able to challenge IBM with technology-based equipment.

The danger is that if a country gives up the component battle and tells its manufacturers to go and do the best they can for themselves in buying from foreign sources, they will run into suppliers who are moving up-market and are making or planning to build just that equipment that the would-be component buyer relies on for his own subsistence. To wait till new products are on the market before starting to manufacture can mean a two-year delay.

Essential for West European countries, Roberts believes, is to have state-of-the-art ability and retain this continually and only to make standard components if these can be produced at competitive prices.

Motorola, believed to be the largest semiconductor manufacturer in the U.S. and on world markets, has this year been honoured with a Queen's Award

## Heavy flow of imports

By Ted Schoeters

under \$1.5bn., with computer exports 16 per cent. up at \$2.6bn. and imports only \$123m. Led by Britain, Europe was a heavy buyer and while no exact figure for the EEC was given by the U.S. Department of Commerce, it looks as if the 1975 figure of a \$1bn. deficit in computing equipment was repeated for 1976.

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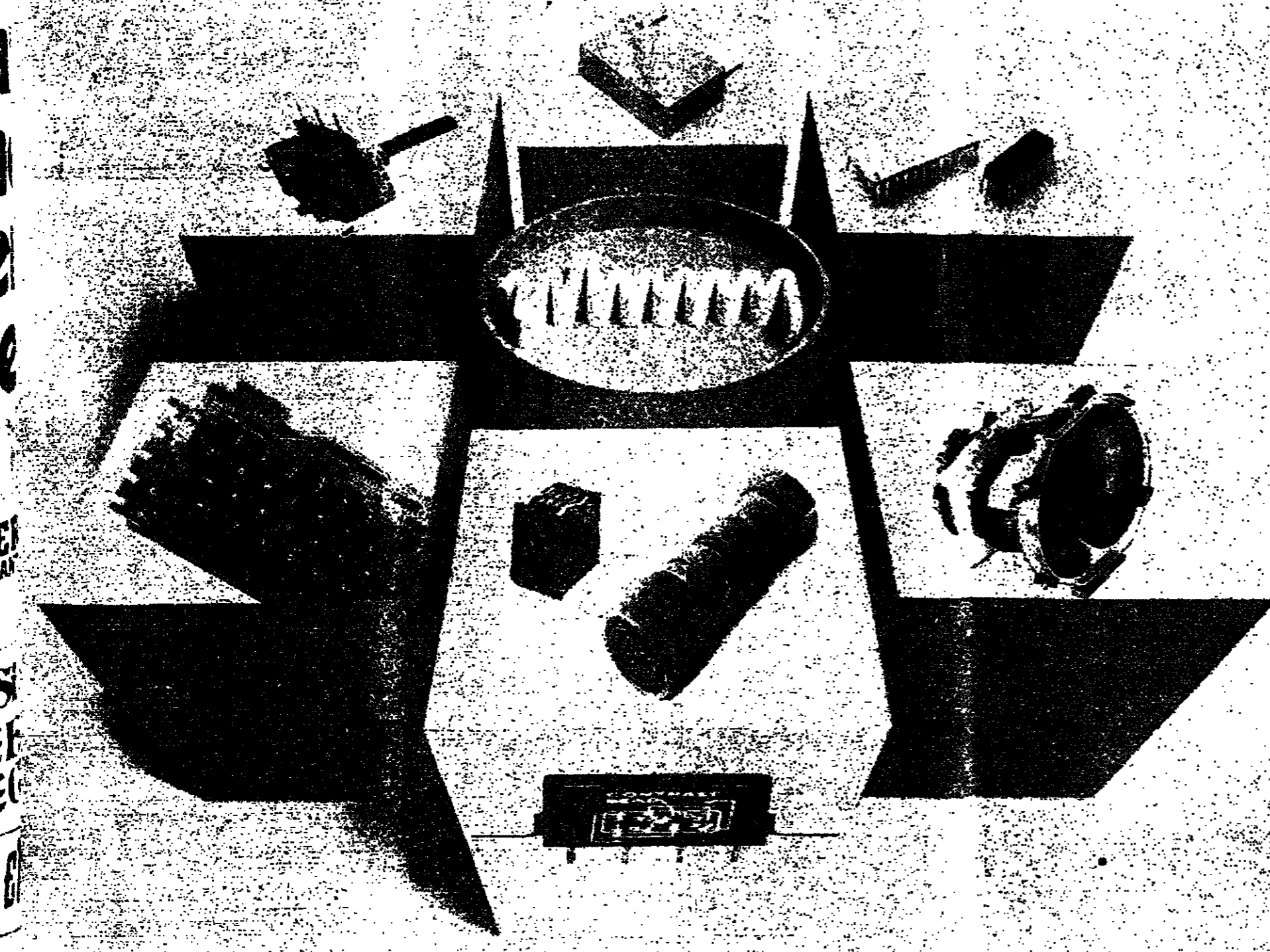
Motorola, believed to be the largest semiconductor manufacturer in the U.S. and on world markets, has this year been honoured with a Queen's Award

### Burden

Motorola is doubling its plant capacity and by end-1978 will have some £7m. worth of buildings and equipment producing for the export markets mainly in Europe. Dr. Larkin puts the cost of setting up a line for the production of microprocessors at about £2m. Thus while the cost of developing a new product such as the Ferranti micro was put at "only a few hundred thousand pounds" it is apparent that the heavy financial burden on a company comes when it has to make the decisions to establish a production technology and determine what its marketing strategies are going to be.

It is clear then that levels of support in electronics, either from the U.K. Government alone or in concert with EEC, are going to have to be multiplied at least tenfold from what they have been in Britain if companies owned and controlled within the EEC are to gain and maintain a world competence in one or more of the leading products of modern electronics technology.

# our exhibits - your quality assurance



Many years of highly specialized experience and capability will be represented on STAND 410 in the GRAND HALL at IBCS.

From our total capability we will be showing compact precision connectors, featuring low contact resistance and maximum reliability. Included are the new marine connectors, Mk 18 and Mk 22, aimed specifically at European above-deck requirements, with additional wide-ranging applications where exposure to weather is a problem. An interesting new inter-rack wiring connector (IWC 100) designed to meet European Telecommunications requirements will also be shown, plus a range of professional switches including the Series 33 Thumbwheel switch with edge connector for PCB assembly, facility for diode mounting and a wide range of switching modes.

The Plessey PCK 2000 Series contactless electronic keyboard is based on a capacitance-coupled keyswitch. Electrical connections are limited to those printed on the PC board. This high-reliability, cost-effective keyboard is approved for use in rugged environmental conditions.

We will also be showing a selection from our extensive range of Bipolar and MOS integrated circuits and demonstrating the benefits of the new SAW technology...

And the Plessey PR16 potentiometers, certainly today's best buy if you want quality pots at consumer prices, range from 1K0 to 2M2 linear and 4K7 to 1M0 log.

You'll have to look quite hard to see our small-size Minibox 1:60 metallised polyester capacitors, which replace the old dipped types. Their special box construction and method of sealing are specifically designed to prevent epoxy cracking, often the cause of short circuit through moisture ingress with dipped types. Ranges from 1000 pF to 10 µF.

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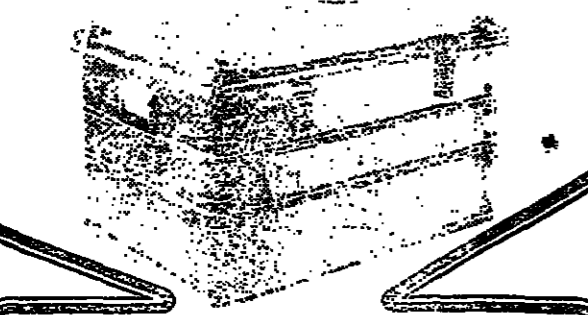
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VETERANS of the electronics industry still recall with mixed awe and amusement one of the earliest attempts to automate the assembly of components into finished circuits. Known as Project Tinkertoy, it was developed by the U.S. National Bureau of Standards in the '50s, and led to the first modular electronics package. But this development, ingenious though it was, failed to make the expected impact because of two quite separate developments which have dominated electronics ever since.

First came the decision by multinational companies to use low-cost workers in developing countries for the labour-intensive assembly operations of electronics. One of the first such moves was made in 1957, when Sony contracted the assembly of transistor radios to a company in Hong Kong. Before long several Far East countries were seeking work of this kind, and other companies started to follow Sony's example. "Off-shore assembly," as it came to be known, began to spread to Taiwan, Korea and Singapore, to Indonesia and the Philippines, to Mexico and Puerto Rico.

While this trend was getting under way, a development in technology pushed concepts like Project Tinkertoy into the area of hopelessly outmoded philosophies. In the early '60s the semiconductor industry came up with the integrated circuit (IC). No longer was it necessary to construct circuits in the traditional way by assembling discrete components and connecting them together. Now several components could be made as an integral part of a single chip of silicon. Early ICs were fairly simple, but there has been a relentless trend towards greater complexity during the past 15 years. Medium-scale integration (MSI) was followed by large-scale integration (LSI), and electronic designers are now pursuing very-large-scale integration (VLSI), with 10,000 or 20,000 components on a chip.

Offshore assembly and the manufacture of integrated circuits soon came together. Although the design of an IC and the processing of the semiconductor wafers are capital-intensive operations and call for a high degree of creativity on the part of electronic engineers, final assembly calls for manual dexterity which—so far—can only be done satisfactorily by the human hand. As early as 1962 Fairchild established a semiconductor

plant in Hong Kong, and to-day it is common for the capital-intensive parts of IC manufacture to be carried out in the U.S., Japan or Europe, and for the labour-intensive assembly operations to be undertaken in any one of the world's low-cost labour areas.

Economics now rule the semiconductor industry to such an extent that an integrated circuit may be designed in one country, processed in another, packaged in a third, tested in a fourth, and marketed wherever the demand may be. It has become meaningless to talk about a country of origin, because usually an integrated circuit cannot be said to have been "made" anywhere.

**Bouts**

But there is little stability in the business of electronics assembly. The multinationals and the offshore nations have a kind of mutual love-hate relationship. The multinationals suffer regular bouts of concern about their dependence on low-cost labour in order to remain competitive, and try to claw back part of the production by automating more manufacturing processes at home. The offshore nations, having first welcomed the multinationals with tax concessions and investment grants, soon realised that their own economic wellbeing lay ultimately in someone else's hands. The executive suite in Mountain View or Dallas. They seek a greater proportion of the production, and at the same time try to establish national electronics industries of their own. On top of that, workers who have developed a taste for the acquisitive society start asking for more, and cheap labour becomes not-so-cheap.

that sales of semiconductor fabrication equipment throughout the world will increase from \$5.4bn. in 1976 to \$9.2bn. in 1982, going well over the \$1bn. mark by 1982.

**Cheaper**

It is significant, though, that automation as such is not a major factor in this increase. It is accounted for mainly by the greater demand for electronic products, and changes in semiconductor technology which require new investment by manufacturers. This expenditure will in itself prompt companies to seek savings in labour costs, which may encourage automation, but often automation is becoming an essential part of the process for technical reasons. The automatic transfer of silicon wafers from one step to another of the manufacturing process, for example, is necessary to ensure the ultra-clean environment which LSI and VLSI demands, rather than to cut back on labour.

Companies which assemble finished equipment also invest heavily in automatic or semi-automatic machinery. It is fairly common these days for a manufacturer to arrange different components in "bandoliers" which then feed through a machine for automatic insertion in printed circuit boards. Cable looms can also be formed by numerically controlled machines running off tapes generated by a computer.

There is no doubt that electronics manufacturers in the developed countries will continue their efforts to automate as much of their production as possible, and save costs by steadily reducing the labour content. There is much to be said for concentrating production at home—the offshore assembly countries may be politically unstable, the well-known developments, and above all the cost of labour grows as the workers' aspirations increase.

But cheap labour is rather like oil—just as we think it is going to run out, somebody finds a fresh deposit. To-day offshore assembly is shifting to areas like the Caribbean and Central America; Texas Instruments has a plant in El Salvador, and Intel is to open one in Barbados. After that it may be Africa.


For a long time to come the successful electronics executive is going to need a sound knowledge of 'geography and good travel agent.

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**Roger Woolmon**  
Editor, Electronics Week

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The technology race

**MOST MANUFACTURERS** of semiconductor components agree with the findings of the latest survey of the industry, carried out by Macintosh Consultants primarily on behalf of the West German Government but also for other European customers, and accept the apparently very high consumption figures predicted—with the general caveat that no one can predict whether the European industrial picture will improve to the extent the Macintosh extrapolations demand.

From a world base of over \$3bn. last year shared out between the U.S. (44 per cent.), Europe (19 per cent.) and Japan (18.9 per cent.), the study team expects demand to grow to over \$5.4bn. in 1980 (40, 21, 19.3 respectively) and to \$9.7bn. in 1985 (36, 23, 19.2 respectively).

The European share in this progression begins at \$590m., rising to \$1.14bn. and finally to \$2.224bn., with Germany's share remaining fairly constant throughout the ten years at just over 37 per cent., France's rising from over 13 per cent. to close on 20 per cent. and Britain's declining as a percentage from just over 19 to just over 18 per cent.

One potent factor exists in Europe that does not apply in the U.S. This is the constant pressure for standardisation, fostered and encouraged by governments who frequently supply the development money, and it is particularly evident in the industrial control market where no other manufacturer has so far sought to operate, the place being left generally to local specialists.

Thus far the microprocessor is a sub-set of large-scale integration. But there are a variety of other areas in electronic components and sub-assemblies where the entry fee is just as high. Take for instance bubble memory, on which companies all over the world have been working for about six or seven years. It is not an easy technology and some developers have gone all the expensive way to inventing new photo-lithographic processes with which to make the tiny storage devices which have the attraction of no moving parts and no loss of information when power is cut off.

perfect the Josphson device which will at cryogenic temperatures switch a signal so fast that current instruments can only guess at its operating speed.

Some assert that because it is a characteristic of the active large-scale component market that price collapse and obsolescence is very rapid, civil servants tend to become obsessed with its problems, considering it to be much larger and more important than that for passive components. But West Europe's off-take of the latter in 1976 was worth about \$3bn. or some 20 per cent. more than for active components.

This consideration has led Loughborough University of Technology to set up its own passive component technology activity in which it is collaborating very closely with a number of companies engaged in their manufacture.

ing in mind that they are computers even though the earliest ones were rudimentary—now are now joining with the army of component specialists in providing prototype support and education to the user.

This is not likely to be the market with aids, for if other sion goes as predicted, master help available is needed, master mechanical solutions to problems, electronic programmable components in all the areas of industry to prove their end-product or reduce its costs. And all this in an area where the actual device cost is a few pounds.

Of course, the micro is not the be all and end all of the industry, despite its importance. The recent Pye/Post Office venture into "memory" telephones, which can recall at a touch of a button as many as 64 numbers of 20-digits each, does not depend on a micro but on a circuit specifically designed for the job. Had a micro been used, the board or boards would have been much larger and current demand much higher. It would be possible to cite other examples, such as the Racal/Ferranti multi-meter development. The point is somewhat similar to that made by National: to the effect that device makers must always be prepared to collaborate with major customers, particularly when this collaboration can mean the birth of a new family of LSIs with large market potential.

Emphasis

And because three years is the time it takes for a passive component to reach obsolescence, there is considerable emphasis on world developments so as to provide advice and support to the companies involved.

This is only a brief look at a vast area of development in which users and potential users can be swamped by an avalanche of new releases from the producers. While, for a time, the developers of micros tended to sell their products with little or no support—bear-

Texas Instruments is one major expecting a great deal from such units and is the first to have brought out a 82K device and to have used a 20K memory in a standard printer.

Other makers, including GEC Semiconductors, expect great things from charge coupled devices which offer slightly faster performance than the bipolar digital and 28 for preceding units and could also be used to simplify the circuitry of such things as cctv cameras out of all recognition.

IBM has spent possibly ten years and a very large sum to

with little or no support—bear-

**Ted Schoeters**

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But we're not solely concerned with export.

We sell to almost every major industrial public company in the UK and to the nationalised industries too.

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**Walmore**

Segments

National Semiconductor puts the 1980 market for the micro with its associated circuits and board systems at \$1bn., and divides it into three main segments. The low-end consumer market would represent \$400m. The general purpose category would be of the same order, covering such functions as data transmission and language translation, peripherals, terminals, etc., while the more complex units of 16-bits will command a computational market worth \$200m.

National sees the white goods market as a major outlet for a simple controller since it is entering a marketplace where there were no electronics before. And it sees one of its major functions as offering an adaptation service which will allow the TV set designer or the car assembler to have his own dedicated micro, which will still be based on a standard product.

One fascinating statistic from National, however, is the estimate for the micros themselves, that is, not including memory or peripherals. The world figures become \$33m. in 1976, rising to \$83m. in 1980 of which \$27m. for the 16-bit processors, or four times as much as last year.

While telecommunications applications will decline in the four years, straight computer applications will expand enormously.

**The major component of the U.K. component business. ITT Components Group.**

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But to be truly competitive we have to think—and act on a larger scale. Which means effectively marketing our wares worldwide. In order to achieve this goal, ITT Components Group design and develop products to compete in this global market, and we are constantly raising standards to meet—and supercede—international requirements.

The idea of 'export' as opposed to 'home production' has always been an artificial division to us. We sell to the world as a matter of course... every year is an export year to ITT Components. And now we are happy to put on record our target of 50% exports by the early 80's.

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ELECTRONIC COMPONENTS III

# Need for reliability uppermost

MATTER how sophisticated components may become... and re seems no limit to their complexity — the overriding question remains: how reliable must they be in an expensive piece of equipment?

Quality-assured components for defence equipment, both in the U.K. or for sale abroad, are essential for British manufacturers in what is a vital export market. Similarly, if components in communications or navigation equipment, which form a link between a civil aircraft and ground, the result could be dangerous.

It is surprisingly easy for an original equipment manufacturer (OEM) to acquire a bad reputation if the components he uses are fault-prone, or fail after a relatively short working life. The reputation for unreliability can be easily acquired and hard to live down.

Unhappily, on the domestic electronics market, where we really have duplicated in miniature form a printed circuit board (PCB) which in standard form would then go on to have the necessary holes punched into it and have standard discrete components added.

Layers

Capacitors can be put down on the same substrate, and these can be built up in multiple layers, to give the exact capacitance value required. Basic thick-film resistors unfortunately suffer from a wide tolerance value. For example, if the desired value is 1,000 ohms, they could exhibit values between 800-1,200 ohms—that is, plus or minus 20 per cent. Most customer applications demand plus or minus 5 per cent or better, and to overcome this the aim is "low" in order to produce a device with an asymmetrical tolerance of -40 per cent, +0 per cent, which yields a resistor which would have a value between 600-1,000 ohms.

As circuits became more complex, with 16-20 resistors on a substrate, it became imperative that a more precise method of

correcting tolerance was employed. The laser trimmer has provided the solution, and can trim 16 resistors to value in approximately three seconds. Now, if minute integrated circuits (ICs) are added, using fine wire bonds to link them with other components, a thick film hybrid circuit is produced which is capable of performing complex linear or digital functions to suit most customer circuit-design needs—at a fraction of the cost required to manufacture circuits previously.

In communications equipment also, conventional passive and active components are losing out to surface acoustic wave and charge coupled device (CCD) filters. These latter planar products are easier to manufacture and have better temperature stability characteristics.

That innovation in the manufacture of components is proceeding rapidly is borne out by the increasing number of specialist exhibitions put on for the sole purpose of catering for the growing number of companies working on every aspect of component production—all of them keen to ensure that their customers can make more reliable parts at a reduced cost.

At the same time, improved component production techniques are leading to increasing use of microcomputer-controlled automated machinery. This cuts down the number of manual tasks, and reduces the possibility of human error. For example, plasma etching systems are replacing wet processes in the fabrication of integrated circuits, and precision laser-controlled measurement is taking over from mechanical gauges, or cruder optoelectronic methods of measurement.

As integrated circuits replace many of the tasks previously performed by moving parts in circuitry, reliability increases accordingly. In the TV set for instance, solid state tuning is replacing mechanical tuning, and this helps to cut down service repair bills for owners. When

colour TV ownership eventually reaches 85 per cent of 20m households by 1985 in the U.K., the sets themselves should have a minimum number of parts in them, and require very little routine maintenance.

So in arriving at more reliable and space-saving devices, the problem of part failure has to a large extent been transferred off the circuit board and onto the interconnections links between individual boards in a system.

Contacts

At this very moment, a particular problem worrying many printed circuit board makers, using gold plated edge connectors (for government contract work and the professional market) is that of obtaining "pore free" coatings of gold on the contacts themselves. It is important that when the Boards are rack-mounted, with the board connectors securely seated into their sockets, that electrical continuity between connector and the socket spring is 100 per cent, and not intermittent.

The widening acceptance of the British Standards, BS9000 system for components in recent years has led to an overall improvement in the quality of parts used. But this has been at no small cost to the component manufacturers themselves. Recently they have had to bear an increased charge from the BSI when they sought product and capability approval.

Component manufacturers must now pay an initial inspection approval fee of £110 per generic specification. Renewal of the inspection approval costs them £75 per annum. For capability approval, a fee of £250 is charged per generic specification, with a renewal fee of £250.

For the purchaser who uses BS approval parts in his equipment it means that he is sure of getting quality assured products. It can also rationalise his parts-in department. Stocking is simplified, and retesting

of the parts is omitted. His designers can save time when they draft out circuit drawings, and he can rest in the knowledge that his final product will be consistent in performance, and need less routine maintenance than was previously possible.

Over the long-term, harmonisation between the British BS9000 standard series and the major European standards will gradually come about. Progress is being made with the European CECC system to try to find common ground between the various Continental standards and the BSI system. It is heartening to know that so many individuals on various EEC technical committees are prepared to spend a lot of time and effort to hasten along a single standards series.

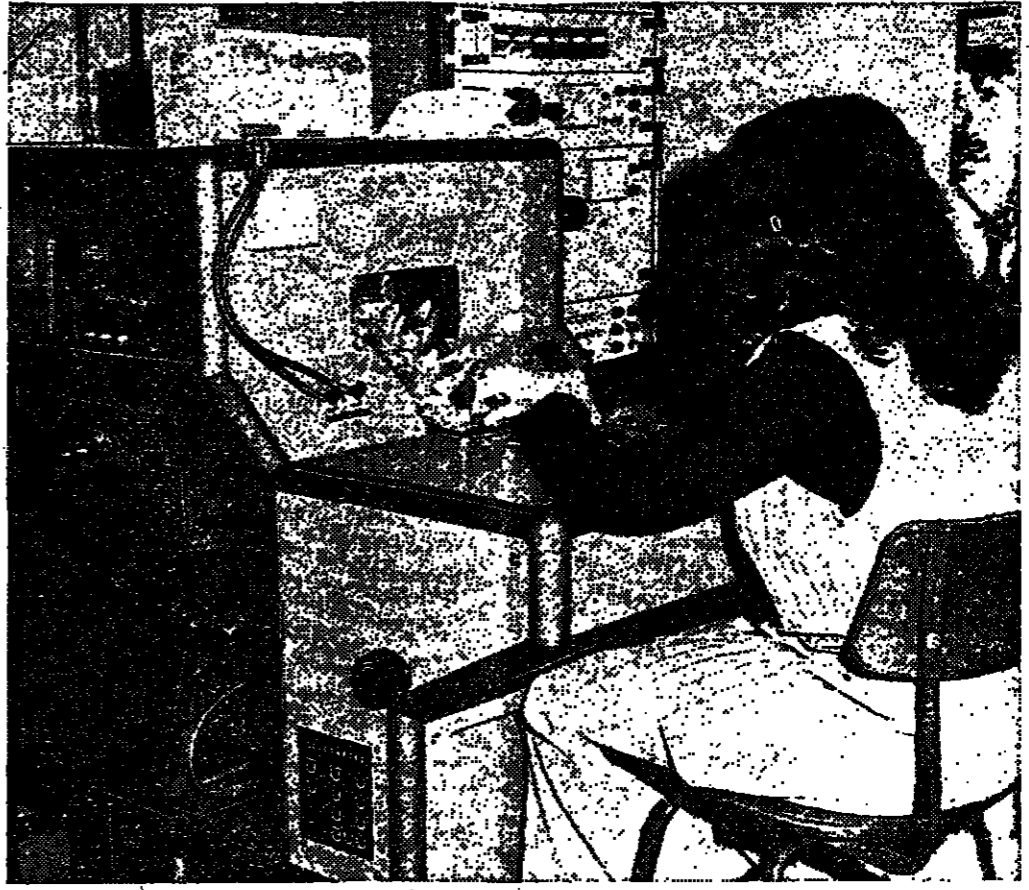
But the task is formidable. Many manufacturers both in the U.K. and on the Continent argue with force that delay in reaching agreement is deliberate, and that individual countries use their existing standards as barriers to hide behind. In this way, they say, a country can go on protecting its own component makers from outside competition for years.

It now appears that the concept of component reliability is beginning to achieve a wider public recognition than was previously thought possible. In 1973 Plessey Connectors, of Northampton, won the British Council of Industrial Design Award for its printed switch.

This switch was an improvement over previous rotary switch assemblies, and was apparently the first component ever to receive this recognition. To-day, the Plessey Printed Switch is on display at the Design Centre, in London's Haymarket, as part of the Design Council's 21st anniversary in this Jubilee year.

Paul Gregg  
Technical Review  
Correspondent,  
Electronics Weekly

Two examples of automatic testing equipment. Above: Checking capacitors at Advance Filmcap, Wrexham, Wales. Below: Thickfilm hybrid substrates under test at Eric Electronics, Yarmouth.



Two examples of automatic testing equipment. Above: Checking capacitors at Advance Filmcap, Wrexham, Wales. Below: Thickfilm hybrid substrates under test at Eric Electronics, Yarmouth.



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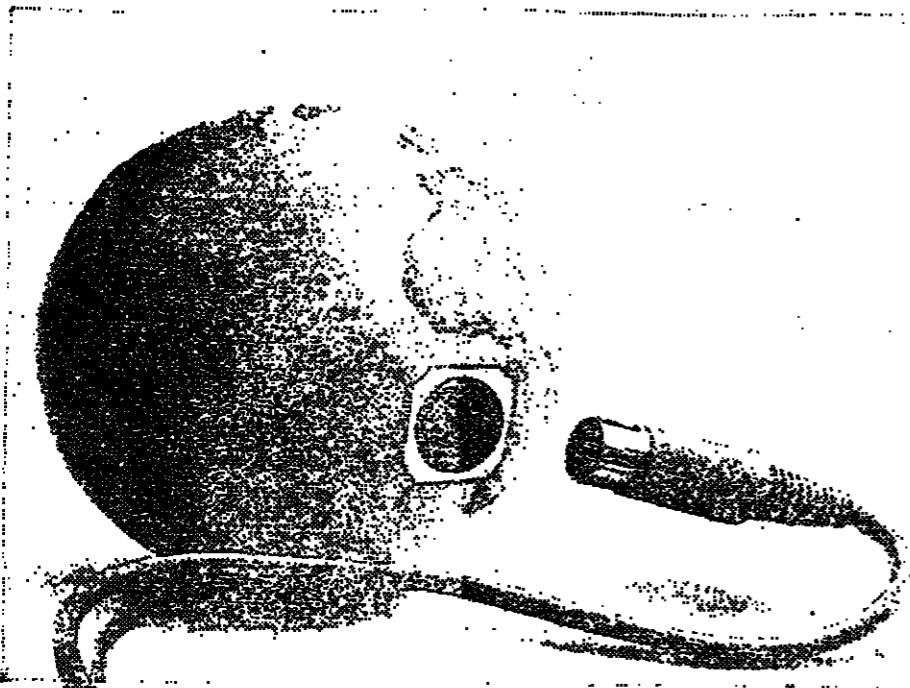


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ELECTRONIC COMPONENTS IV

Stringent tests for quality control



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Registration form for the LECS 77 show, including fields for name, address, and company details.

SOME TEN years ago, when it became clear that the trend in electronic component engineering was to crowd more and more active units into thinner and tinier devices, to save signal time and power and avoid heating problems...

Yet tests there had to be because of the stringent demands imposed by such customers as the military and space research establishments...

It is hardly surprising that the makers of automated test equipment have had somewhat of a rough ride to keep up with the headlong progress of the device engineers...

Marked

Many of the biggest users of components in the U.K. have bought equipment worth around the £250,000 mark...

Inevitably the test equipment itself is operated by computer, frequently one of the more powerful minis which have become available in the past three or four years...

consuming and require highly skilled staff to carry out and analyse.

It would be difficult to automate fully testing at the goods inward stage. But at the same time, as manufacturers move more and more into fully automated device assembly...

This is an area fraught with problems for users and distributors and to provide assistance on product assessment and testing Plessey's Product Assessment Laboratories has set up an Active Components Evaluation Facility...

Initially, services will be provided for discrete semiconductors, linear and digital integrated circuits. They will cover product approval assessment, device characterisation, comparative evaluation, preparation of specifications and analysis of applications...

vision of advice on national and international standards.

This service is complementary to a similar service on passive components, and to the calibration service also operating out of Titchfield.

One recent development which appears to have aroused a great deal of interest is an announcement by Hewlett-Packard (H-P) of an ingenious and apparently simple method of finding a faulty component in a digital circuit.

In the case of large computers, where down time can be much more expensive than service charges, it does not apply. But for lower-cost equipment such as electronic cash registers and the like...

Another reason for the H-P work is the fact that many digital circuits are too complex to test adequately with oscilloscopes because the trace they produce is too complex to examine.

H-P's signature analyser studies a long stream of bits from the equipment under test at a selected point in its circuitry. The stream is chopped up into segments after a transient of an arbitrary nature...

It is early days yet, since widespread use of this approach would mean that circuits would have to be designed for it...

It is hard to determine who now leads in the automated test equipment market when Fairchild, Teradyne, Tektronix and Macrodatta are running neck and neck...

So far only one U.K. company has been mentioned in the context of automated testing and while it is true that several U.K. groups have made a name for themselves in this type of equipment...

Ted Schoeter



Microscopic examination of the surface of complex component chips at the East Kilbride factory of Motorola, now being expanded to twice its capacity.

Pace of development poses problems

"YOU CAN'T hold off technology," cry the big semiconductor companies cheerfully, as they bring out new product after new product...

No, you can't hold back technology; but perhaps there is one thing that can do the job for you — perhaps technology will hold back technology. There are certainly enough people rooting for anyone or anything that can slow down the rate of technological advance.

To show just how absurd the rate of "progress" has become, take two products, one well-known, one which has been eclipsed before rising. Take the second one, a product designed to convert analogue signals to digital eight-bit code patterns...

The company, which is not alone in having fallen into the trap, and will therefore remain nameless, used to manufacture A/D converters costing several hundred pounds, on a large printed circuit board. These devices gave 12 bits precision — that is, accuracy to one part in 4096 — but since most of the people who wanted digital information were working with 8-bit microprocessors those days...

The normal many thousands of dollars worth of R and D was spent designing three integrated circuit "chips" which included as much as possible of the components formerly painstakingly and expensively assembled on the board...

First, details of this wonderful example of applied technology had been looked to the Press, together with initial hints on how the new device would be used with the most

standard microprocessor, the Intel 8080A, and the company was just starting to tuck in its bib for the feast, when, in January this year, the big semiconductor makers emerged from the Jecdec conference in Dallas with the agreed performance specifications of second generation CMOS-complementary metal-oxide silicon.

Goodbye

Among the products which they all have on the stocks for release this year, it seems, is a CMOS LSI chip for A/D conversion. It should sell for well under £10. Goodbye the £100 hybrid!

On a slightly less irritating time-frame, but equally illustrative of the quandary which modern electronics designers find themselves in, consider the case of Intel and the 80s. As anybody who knows his alpha-numeric can instantly tell you, the first 80 was the 8008, the second was the 8080, and now we have the 8085. By the end of the year, we will have the 8086 — a 16-bit microprocessor designed to challenge Texas Instruments with its 9900.

But the interesting and unremarked fact is that until the first two months of this year, the top-selling micro was not, of course, the sophisticated, fast, single power supply 8085. It was not even the old multi-chip systems maze maker, the dual power supply 8080. It was the 8008, which pundits have been describing as obsolete for two years now.

If the suppliers have this much trouble, how about the users? One of the U.K.'s self-made microprocessor selling giants, distributor Dave Griffin of Cramer, has recently been taking a seminar circuit around the country, comparing the three devices he is franchised to sell, and giving eager audience useful tips on how to go about designing with them.

Just as the world begins to understand electronics again, the new invention will come. What phenomenon. One of the least credible, but most popular, is that micro designs will be replaced by "custom chip" circuits, in the way that a bread-board of TTL was (and still is) reduced to LSI circuitry.

allowance for training staff — and then double the total." That rule of thumb, applied to the 8008, explains why designs using it are still appearing on the market for the first time.

But it also means something else — something far more radical than can be realised by merely comparing the current technological revolution, the microprocessor, with the previous revolution caused by TTL — the integrated transistor-transistor logic gate.

The radical difference is software, and the reason it is different from the skill investment of the TTL designer, is that it remains with the company that employs the software designer. And much of the software written for a first design, is applicable to the second — providing it can be used.

Historically, it could not. The design of the 8008 dictated its computer architecture — how the registers worked, how many clock cycles to execute a given instruction, how many instructions and so on. The hardware advances made by the time of the 8080 allowed a more sophisticated architecture, and by the time Motorola produced its upgrade, the 6800, even smoother software features were included.

But by this time, the investment in software had become significant. Both Intel itself, and "whizkid" Zilog, decided to produce upgrades of the 8080 that included, almost exactly, its original features, despite hardware capabilities that could have produced an infinitely more sophisticated computing device. They could run the original software.

The fact is that consumer resistance to new designs has become more than merely psychological. Nobody is prepared to go through the first-design project twice, and the work involved in converting to a new microprocessor is equivalent to very nearly that.

The industry has drawn some odd conclusions from this new phenomenon. One of the least credible, but most popular, is that micro designs will be replaced by "custom chip" circuits, in the way that a bread-board of TTL was (and still is) reduced to LSI circuitry.

This attractive fallacy may come to apply to a few very

large-scale projects, such as the design of a motor-car micro for General Motors by Motorola and Delco, based on the 6800; or such as the TTL washing-machine chip. But once the software expertise is more readily available in the company — and in the open market — the second-project development savings possible by re-using software, will quickly swing the economic balance, by offering quicker products than can be achieved through custom circuit designs.

Looking into the future, what is certain is that more sophisticated hardware will be available. But from the point of view of the designer, it will look like the old, only use less power, fewer chips, and run faster.

Techniques

At Texas Instruments, a company more renowned for its phenomenal production capacities than its technological lead, Stuart Kitchiner, integrated circuit sales chief in Bedford, speaks confidently of producing chips in current silicon technologies, but with X-ray and electron-beam imaging techniques used to get 100 times the circuitry in the same chip area.

But although we can't see the end of the step-function increases in technology, the software will remain, he reckons. "We couldn't support another major micro family. The 9900 has got to last us another six or seven years, at least."

In the same way, Intel will almost certainly ship 8080 instructions, even going 16 bit! So will Zilog. And Motorola will ship 6800, even when the Delco derivative. Even when the devices are 32 bits wide, and have 24K of read and write memory (RAM) plus I/O controllers all on one chip.

Just as the world begins to understand electronics again, the new invention will come. What phenomenon. One of the least credible, but most popular, is that micro designs will be replaced by "custom chip" circuits, in the way that a bread-board of TTL was (and still is) reduced to LSI circuitry.

Guy Kewney

In a word... reliability

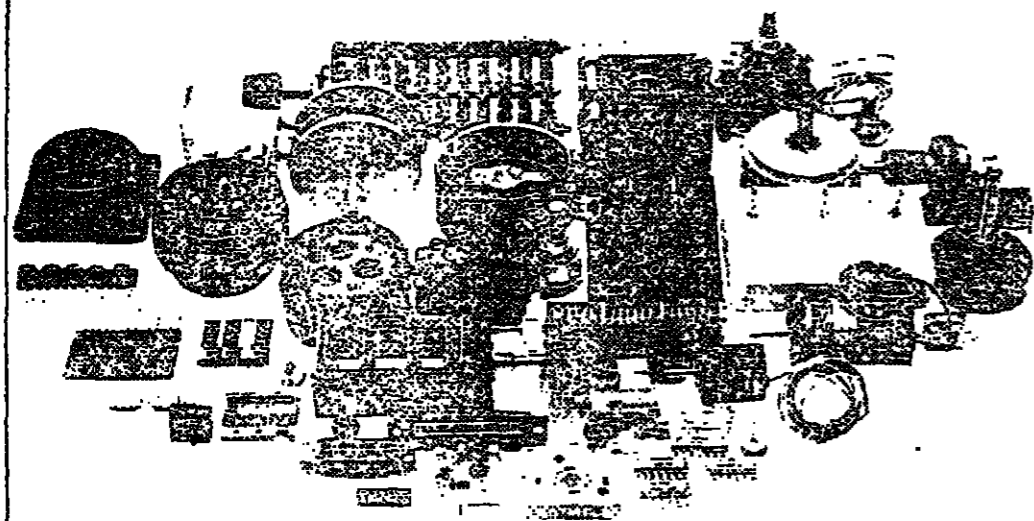
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# ELECTRONIC COMPONENTS V

July 1975

## The industry's wares on show

**MORE COMPLEX** the device bought as a component, though it may be a component in its own right or a high-capacity memory, the more emphasis has to be laid on the user — passive — components which go into the construction of the final equipment and many of the companies showing their wares at ILECS, the 28th International London Electronic Components Exhibition (Olympia, May 17 to 20) are presenting the work they have done to make the latest "gee-whizz" products function reliably.

It is pointed out by one exhibitor, Electronic Services and Products (ESP), that in a typical electronic instrument 30 per cent of the components are capacitors and that in 90 per cent of cases of failure these instruments, capacitors

were the cause. ESP, naturally, has a product to remedy this deficiency, a digital meter which uses a capacitance technique to determine, rapidly, all the important characteristics of a capacitor. With this unit goes a decade box which gives a timing range from 1 microsecond to 100 seconds, though whether a designer will ever have to use the latter facility is a moot point.

Connectors and methods of achieving first-class joins in wiring are another strong point which underlines the fact that the design of connectors brings in as many disciplines as it demands working knowledge of many materials, including high-cost metals and alloys, as well as plastics and plastics moulding techniques.

The doyen of the connector world, Seallectro, will be showing a selection from its huge repertoire, but also such devices as terminals and card and badge readers, including a prototype low-cost and lightweight reader with photo-optic hole sensing.

BICC-Burndy in this sector will have on view many of its specialist connectors for printed circuit boards and telecommunications work, including recently available Bantam circular connectors and Flexlok flexible connectors.

Meeting the interest for the newer insulation materials is the exhibit from Concordia Electric Wire and Cable which has on view for the first time a polyetherimide insulated wire which has a protective polyamide-imide top coat. Heat-resisting pvc and various other

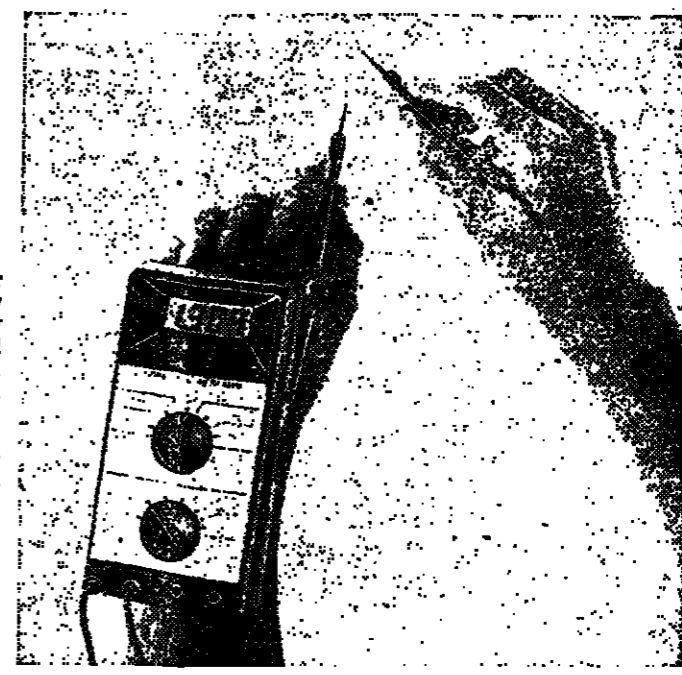
formulations to British standards and customer specifications are also shown and the company's specialist service illustrated.

Adcola Products has an exhibit devoted to soldering instruments and accessories of U.K. design including its Unit 101 50W soldering station which has been designed specifically with the protection of voltage-sensitive components in mind.

Model 22 has a 200-hour operating life on one battery set, a clear liquid crystal display and ability to cope with ac and dc volts, ac and dc current and resistance and has a claimed accuracy of 0.1 per cent.

For the first time in Britain, Plessey will be demonstrating its contactless electronic keyboard which operates through capacitance coupled keyswitches. It has no electrical connections other than those of the underlying printed circuit board and thus cuts out all the mechanical stresses which can affect boards linked with keys used to operate switches.

It has been designed specifically for the peripherals and computer equipment market as a replacement for the contacting family of keyboards.



Above, with both hands free, a technician probes a circuit using the Telonic Altair (Datatech) wrist-portable digital multimeter, first of its type anywhere. Below, the ESP company's capacitance tester is shown in use with the company's decade box to test the characteristics of capacitors incorporated into complex digital circuits.

### Earthed

Accurate control of soldering temperature is provided to within  $\pm 2$  per cent of indicated dial temperature and voltage transients are eliminated while the tool is totally earthed from supply input to the soldering bit. This cuts out the leakage currents dangerous to the LSI's.

Wire-wrapping is another interconnection technique, illustrated by Augat Group on its stand through the computer-controlled unit presented by Datatech. The computer used in this equipment remembers various interconnection patterns, selected on demand, and takes the wire wrapping head from post to post as required without mistakes, however complex the pattern. This means a great time saving and an elimination of human error compared with a manual approach, even when the human operators are helped by automated aids.

An NSF (Lucas Group) development is the Heleneid, which describes a solenoid capable of making movements of up to one millimetre in under one millisecond at high thrust ratings.

It is capable of providing as much as 300 lbf from a device only 38 mm. in diameter and 50 mm. in length. But at the same time, the Heleneid is capable of fast repetitive movement over long periods of time and a smaller device than the above-mentioned one has completed 44m. cycles at a frequency of 46 Hz on an operating force of about 50 lbf.

And since on-the-wrist devices are all the rage, the Penril/Data Tech — Telonic — hand-mounted digital multimeter will undoubtedly attract attention since it is obvious from first view that it leaves a technician both hands free to operate the probes required for testing purposes.

Completely new is a series of power supplies up to 100 kV designated C Series "Computer Ready."

Now Plessey is also offering ULAs as an extension of its custom design activities. Currently it has one device which is a relatively slow, small array of resistor-transistor gates. But the company has plans to expand its range with two more ULAs which could well bring the use of ULAs into more demanding applications. The new Plessey devices are a 10k-gate emitter-coupled logic array for use in high-speed computing applications, and a huge 1,000 gate array which uses the new bipolar technology called I.L.



Below, the ESP company's capacitance tester is shown in use with the company's decade box to test the characteristics of capacitors incorporated into complex digital circuits.

## Custom-design services

**ESPIE** the overwhelming manufacturers are encouraging increase in the use of standard programmable logic devices (PLDs) and the introduction of the microprocessor, in several applications the dedicated integrated circuit is still the most efficient answer for electronic equipment design. There is booming demand in custom design services in custom building and semiconductor manufacturers operating in this field report expanding business, with more orders coming from elsewhere in Europe as well as from the U.S.

functions. Ferranti claims to have had great success with its ULAs over the past two years and to hold existing orders worth £2m.

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in some instances, the equipment manufacturer can make use of the design facilities of the semiconductor house to produce his own product. Hughes, in Glenrothes, offers a special computer-aided design facility for use by customers. Called COMIC (for Customer Organised MOS Integrated Circuits), the facility is designed to meet the requirements of lower quantity custom design, where design costs must be kept to a minimum. The facility consists of a library of logic function cells, which the customer can organise to fit his own requirements. Hughes quotes several examples of the types of circuits they can produce in their custom design facility: CMOS circuits for a Norwegian defence system, MOS circuits for the Post Office, and remote control systems for TV produced in conjunction with a European TV manufacturer.

An alternative approach taken by the more sophisticated equipment designers is contract manufacturing, where the customer does all the design work to a standard semiconductor manufacturing process. This allows him to call upon any of several processing houses to produce his devices. This was the route taken by Pye TMC for its recently announced automatic telephone dialling systems.

Plessey plans to introduce the ECL array in September, according to Ken Bradshaw, with the PL array following early next year. Already, samples of the ECL array are with prospective customers, he says. Bradshaw claims that Plessey will dominate the ULA market by 1980, which he estimates to be worth a total of around £250m.

But the real strength of ULAs is that they can be simply and quickly implemented in the customer's design requirements. The circuits are 80 per cent standard, say Ferranti, and only require one extra masking stage to be completed. This final process dictates the aluminum connections between the logic elements and defines the function of the chip.

Advantages of dedicated circuit can be in performance, reliability and, in large volume applications, on cost. Another primary motive for taking the custom design route to electronic equipment design is for commercial security reasons. According to Plessey Semiconductors, which estimates that one-third of its business is in custom design, with around 600 custom devices now in production, customers these days custom design for three reasons. Ken Bradshaw, marketing manager, explains: "Customers may need a prototype of a new design order to achieve their required performance. Here custom design provides security design investment." Secondly, "The customer may have some unique solution to a design problem in a competitive market position. Another motive may be to optimise the unit production."

Pye TMC's John Rhodes is a great believer in purpose designed large-scale integrated circuits. His company's philosophy is based on the belief that only those engineers involved in a particular industry sector are fully familiar with its requirements, and that in-house design of special devices is the most efficient solution. Multipurpose chips which can be modified or used in conjunction with other devices to meet requirements increase costs and produce a less efficient system, says Pye.

General Instruments as production houses for its latest venture. The company can furnish layout data to semiconductor manufacturers so that they can make the chips on any standard MOS production line without even knowing what the circuits are for.

A short-cut to custom design is, however, offered by an all-purpose logic circuit pioneered in the U.K. by Ferranti. The so-called uncommitted logic array is a matrix of logic gates which can be connected in any required pattern to specify its

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complying with their own harmonised standards. Mullard involvement with Europe has been a long one. This involvement, together with access to worldwide resources, has played a significant role in the firm location in Britain of a major part of the European component industry. This industry's development and manufacturing capability is growing from strength to strength: a strength that will enable it to face the challenges from the West and East. A strong, viable electronic component industry is vital to the growth of British equipment manufacture.

## Mullard, well connected throughout Europe



approaches

Pye has used Plessey and several different approaches to custom design are open to electronic equipment manufacturer, ranging from the complete design and manufacturing service offered by several semiconductor houses in the U.K. to in-house design in which the equipment manufacturer will do final layout drawings which merely require processing to produce devices which are then assembled and tested in the process house.

Increasingly, the trend is towards more customer involvement in design. Semiconductor

But the real strength of ULAs is that they can be simply and quickly implemented in the customer's design requirements. The circuits are 80 per cent standard, say Ferranti, and only require one extra masking stage to be completed. This final process dictates the aluminum connections between the logic elements and defines the function of the chip.

According to Ferranti the design of this connection mask is analogous to printed circuit board design and is therefore a familiar process to most customers. The company offers customers' engineers a two-week training course to enable them to perform their own mask design if required. This simple approach allows ULA designs to be completed within a matter of a few weeks which cuts down design costs considerably, and makes them particularly attractive to equipment manufacturers needing a quick solution in competitive markets.

Ferranti answer criticisms of inefficient use of chip space by saying that in many designs the circuits are equivalent in packing density to purpose built LSI circuits.

The ULA is seen by manufacturers as offering the best of both worlds; the speed of design with standard circuits, and the security and repeatability of custom design. What it means to the customers could be a lowering of the threshold above which custom design becomes a viable approach to electronic equipment design.

Mullard are this country's largest electronic component manufacturers with an outstanding record in exports. And that's not all... because we're also the UK arm of Philips' worldwide component activity, we can offer our British customers the widest range of components, supported by the most extensive resources, available in Europe. This availability recently became doubly significant to British industry with the advent of the CECC European standard. Components of manufacturers achieving the high quality demanded for CECC approval are assured of acceptance by participating countries as

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PARLIAMENT and POLITICS

PM looks for next mortgage rate fall

BY IVOR OWEN, PARLIAMENTARY STAFF

ANOTHER FALL in building society interest rates "soon" was forecast by the Prime Minister in the Commons yesterday when he again claimed that most of the economic indicators are moving in the right direction.

But while he pointed to the rise in Britain's official reserves and the continuing steady decline in interest rates, Mrs. Margaret Thatcher, Opposition leader, asserted that since Labour returned to power in 1974, Britain had had the worst record on inflation of any European country except Iceland.

Mr. Callaghan reaffirmed his view that the inflation rate will continue to fall in the second half of this year and in the first quarter of 1978.

He accused Tory backbenchers of showing "glee" at the decision of the AUEW conference against participation in another round of pay restraint.

Mr. Callaghan said that the Government would be ready to reflate the economy, Mr. Callaghan assured him that the Government would be ready to reflate the economy.

Dealing with a suggestion by Mr. Flannery that the way to relieve the pressures was to reflate the economy, Mr. Callaghan assured him that the Government would be ready to reflate the economy.

Reading what he described as a "considered reply" to a question from Mr. Donald Stewart, Mr. Callaghan told the House: "The Queen's Ewing and other loyalists in the to MPs and peers when she SNF."

Callaghan denies changing Hansard

TEMPERS FLARED in the Commons yesterday over a Hansard report of what the Prime Minister said or did not say—in the House on Tuesday about Government policy on aid to liberation movements.

Mr. Callaghan was replying to an allegation by Mr. John Davies, shadow Foreign Secretary, that he had altered Hansard's account of his speech on Tuesday.

The Prime Minister confessed that he did not remember whether he had used the word "always" which the row was all about.

Mr. Davies had questioned Dr. David Owen, Foreign Secretary, in the Commons on Wednesday about the Hansard report of the previous day's proceedings.

Mr. Callaghan said that he had altered Hansard's account of his speech on Tuesday.

Mr. Callaghan advised MPs to read the Queen's speech again and said this would show that it specifically recognised the strength of feeling on the devolution of government to Scotland and Wales and stressed the benefits of maintaining the integrity of the U.K.

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Powell pledges support for Ulster rule of law

BY JOHN HUNT, PARLIAMENTARY CORRESPONDENT

THE PEOPLE of Northern Ireland are demonstrating their desire to work normally in the face of threats and intimidation.

Mr. Don Connaughton, Minister of State for Northern Ireland, told the Commons yesterday.

There were cheers of support as Mr. Powell told him that the events of the last few days were proving the commitment of the overwhelming majority of people in the House to the rule of law.

The wearing of masks by the Government to be more robust in their attitude.

Lord Duncanson said that the Government should be more robust in their attitude.

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Football hooligan proposal hits snag

Financial Times Reporter

THE HOME OFFICE is considering an extensive scheme to make hooliganism a criminal offence.

Mr. Roy Mason, Northern Ireland Secretary, said that the Government was developing plans to make hooliganism a criminal offence.

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Queen's unity call 'made on advice of Ministers'

BY IVOR OWEN, PARLIAMENTARY STAFF

WITH A FEW deft touches in the Commons yesterday, the Queen's speech was given a further involvement of the Queen in the political controversy over whether devolution could lead to the break-up of the U.K.

In the course of good-tempered and, at times, light-hearted question time exchanges, he made it clear that her striking plea to Parliament on Wednesday to ensure the continuing unity of the kingdom should be regarded as having been made on the advice of Ministers.

Reading what he described as a "considered reply" to a question from Mr. Donald Stewart, Mr. Callaghan told the House: "The Queen's Ewing and other loyalists in the to MPs and peers when she SNF."

Mr. Callaghan advised MPs to read the Queen's speech again and said this would show that it specifically recognised the strength of feeling on the devolution of government to Scotland and Wales and stressed the benefits of maintaining the integrity of the U.K.

Right way

"We must over the next two to three months, try to work for a policy which will relieve those pressures," he said.

Dealing with a suggestion by Mr. Flannery that the way to relieve the pressures was to reflate the economy, Mr. Callaghan assured him that the Government would be ready to reflate the economy.

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Useful

Mr. Stewart jocularly suggested that as a member of the House of Stuart, with all its loyalty to Her Majesty, there might be better claimants than that advanced by Mr. Canavan.

Replying to Mr. David Steel, the Liberal leader, the Prime Minister recalled that the House gave a second reading to the devolution Bill by a substantial majority.

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Montrose has not sought U.K. entry, peers told

THE DUKE of Montrose, former member of the rebel Rhodesian Cabinet, knew that if he came to Britain individuals could take out a private prosecution against him, Lord Peart said yesterday.

Lord Peart said that the Duke had not made any application for passport facilities to attend the gathering of the clans in Scotland.

Following reports that the Duke would be barred from entering Britain, Lord Paget (Labour) earlier this week raised the matter as a possible breach of privilege.

Lord Peart explained yesterday that the Duke had "leave of absence from this House—a circumstance which suggests that he has removed from the list of those subject to passport and travel restrictions."

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Shoplifting shows steep rise

Financial Times Reporter

A DRAMATIC increase in the number of people prosecuted and cautioned for shoplifting in Scotland and Wales was disclosed yesterday to the Commons.

Mr. Shirley Summerskill, Under-Secretary of State at the Home Office, told MPs that the number of shoplifters had risen to about 10,000 in 1975 compared to 7,000 in 1971.

She had been asked about shoplifting and particularly the new methods employed by retailers in the wake of the supermarket boom.

Mr. Adley asked if the Government was considering any measures to curb the increase in shoplifting.

She pointed out that although it had made no recommendations to the Government for action, she had passed a number of letters and the Home Office was encouraging the retailers to adopt them.

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Written Answers

Mr. John Lee (Lab., Handsworth). What criteria the Chancellor applies to the exemption of so-called multinational companies from U.K. dividend restraint?

Mr. Neville Trotter (Con., Tynemouth). Has the Secretary of State met representatives of the management and work force at C. and A. Parsons since the firm announced a programme of 1,600 redundancies due to the lack of an order for Drax B power stations?

Mr. Russell Kerr (Lab., Feltham and Heston). Has the Secretary of State paid any public dividend capital to British Aerospace?

Mr. Eric Varley, Secretary for Industry. I have, with the approval of the Treasury, said to British Aerospace £27m of public dividend capital, which together with advances from the National Loans Fund will enable it to repay loans to one of the parents of the vesting companies.

Cabinet 'open to Press' rejected

THE PRIME MINISTER yesterday rejected the idea that the Press might be admitted to Cabinet meetings. He stressed in the Commons that he was in favour of as much open government as possible but there were times when issues needed to be talked about quietly in private.

Open coaches for Jubilee ride

THE QUEEN and other members of the Royal Family will return to Buckingham Palace in open carriages on Jubilee Day—June 7—after a service in St. Paul's Cathedral and lunch at the Guildhall.

COMPAGNIE FRANCAISE DE L'AFRIQUE OCCIDENTALE advertisement. At a Meeting held on the 20th April 1977, the Board examined the accounts for the financial year ended 31 December 1976.

Handwritten note: 10/15/50

Joy, 10/1/75

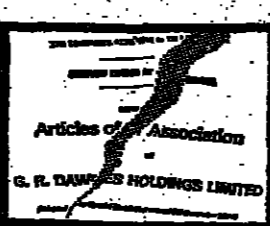
# The Management Page

EDITED BY CHRISTOPHER LORENZ

DAVE arrived at a point where we can't win and we lose." Thus, Mr. Howard, chairman of G.R. Dawes, described the position of Birmingham-based banked industrial group just months ago when he noted its performance in the financial year.

Mr. Dawes may not then realise how prophetic remark would prove to be, week, he announced to wind up the company make a capital payment on assets.

The unusual aspect of this proposal is that it envisages a "reholders' voluntary liquidation", and not, as has so often been the case in the past three or four years, a compulsory liquidation made necessary by company's insolvency. Dawes certainly not insolvent indeed it anticipates a minimum payment of 12p a share. Both its industrial side, where interests range from drop forging to plastic mouldings, and the banking side, where the G.R. Dawes and Co. subsidiary emerged from the secondary banking debacle in an extremely liquid position, and



## A profit-maker this week baulked at the future Solvent—but bowing out

By Nicholas Leslie

In mid-1973. Then known as the Neville Group, it sold a subsidiary called Country Kitchen Foods for £4m, as part of a reorganisation aimed at increasing the emphasis on banking (a further £2.5m of capital was pumped into this side of the business) while at the same time creating a more even balance between banking and industrial interests. The industrial side subsequently rested largely in three subsidiaries involved in drop forging and heat treatment, plastic moulded products and a departmental discount store.

Because of the reorganisation, the company got its share listing suspended in mid-1973. It was unfortunate that the secondary banking crisis developed just a few months later, because the uncertainty it created in the

banking market not only affected business, but made the company loath to seek a quotation for its shares until October, 1975. Assets of the holding company are now divided roughly 50:50 between banking and industrial, but it is the latter which provides the larger slice of group profits.

According to Howard Dawes, the main Board's philosophy is to allow the subsidiary companies considerable autonomy, each with its own managing, sales and financial directors and often a technical director. This leaves them free to plan their own strategies, with the main Board's principal involvement being in discussing budgets and cash flow forecasts.

Because the subsidiaries always stand on their own feet,

enough to support the type of investment needed.

The situation for the banking subsidiary is somewhat different. A necessarily cautious approach to business in the past four years means it is now a "cash box" with a high ratio of deposits to loans and most assets being in easily realisable form. Since it is unlikely to be given authorised status by the Bank of England it cannot compete effectively with other banks in deposit/loans business, and to invest more funds in other areas like property or land would be unattractive to shareholders. This is because any profitable sale of such property or land would give the company an internal capital gains tax liability, while any on-going benefit in the form of improved share price would subject the shareholder to a further gains tax liability if he sold his shares.

Presumably, Dawes also has the option to sell one subsidiary to raise funds for the others, but this would seem to run contrary to the Board's view on balance of interests. The only answer the Board sees is to find for each company a buyer large

with a market share price of 95p—prior to the liquidation announcement—much less than the value that would result from selling the trading companies on a going-concern basis. It is at this point that the Dawes family involvement takes on a particular significance. The Dawes holding accounts for a large part of the 45.86 per cent. shareholding in the hands of all main Board directors. Their position, according to Howard Dawes, now conflicts with that of the main body of shareholders because of the tax position. While most shareholders would benefit from increased dividends if they could be paid, the Dawes family would merely have a tax problem.

It is easy to see, therefore, that the Dawes family would be among those to benefit most by merely having to pay capital gains tax as a result of a liquidation.

Clearly, the proposed Dawes liquidation is the result of many factors, some of them probably peculiar to the company, but others common to many. The Dawes judgment is that it is not worth the risk to alter its philosophy and go on.

## The controversial architect of Taylor Woodrow's long success, 72-year-old Sir Frank Taylor, talks to Michael Cassell.

### Building on paternalist foundations

"TO-DAY, THE British industrialist has to spend much time trying to keep his business from falling into the hands of those who would steal it. We are faced with a situation which appals people overseas, but which seems to be getting worse."

Sir Frank Taylor's views on growing state intervention in industry and commerce are blunt and highly controversial and have been formed during the 55 years it has taken him to build Taylor Woodrow from a small Blackpool contracting company into one of the giants of the international civil engineering and construction world, with a turnover now well over £400m a year.

His views as a champion of free enterprise and critic of what he calls the "something for nothing brigade" have kept him in the public eye for many years and his opinions have helped establish him as a close friend of senior Conservative politicians as well as a force to contend with in the rough and tough business of building.

Few could deny that Sir Frank's strategy, based on what he thinks may, in some circles, be regarded as the "old fashioned" principles of integrity, strength of character and loyalty, has provided him with the successful recipe for his own company.

In early April, Taylor Woodrow revealed record profits—nearly £21m—for the 16th consecutive year, and soon afterwards learnt that its international operation had won the Queen's Award for Export Achievement for the second

At 72, Sir Frank retains the managing directorship of the group and his grip seems firm. To those who accuse him of running a paternalistic enterprise in which "star prizes" are awarded for good ideas, employees are picked out for free-seaside holidays and everyone is addressed as "team member," he points to the record and claims that his employees are as anxious to maintain the present management style as he is himself.

He does not believe it is wrong to circulate literature of a distinctly political flavour among employees or to reprint them in his group's house magazine. Busi-



ness and politics, he says, used to be kept apart but this was no longer possible and the opponents of his ideals had to be matched at their own game.

People, Sir Frank emphasises, may not show up in the balance sheet but they are any company's most valuable asset. "Too many managements treat employees as minions. Too many do not bother to say 'well done' or 'thank you' when they should. To inspire allegiance you have to encourage effort and reward when it is due. Then, when things get tough, you can count on your employees, so they have a share in our success to show

for their efforts. Our incentive schemes provide them with a positive stimulus to think about what they are doing and to suggest areas for improvement."

Sir Frank was heartened that the last attempt by a major trades union to establish a foothold in the company was firmly rejected by the employees. "The union representatives handed out leaflets and called a meeting and tried to make fun of our 'team member' approach. They asked if the employees liked being treated as if they were children; and, of course, nothing could be further from the truth. We believe in involving everybody and in generating personal enthusiasm. Indi-

vidual effort is absolutely essential.

It is hardly surprising to find that Sir Frank regards the spread of nationalisation as a threat to the nation's future livelihood.

"The present desire to expand the role of direct labour departments in our industry, for example, chooses to ignore completely their record of inefficient and extravagant use of public funds."

But business is not all politics and Sir Frank has equally forthright views on the best way to run a company. He claims Taylor Woodrow has managed to turn in consistently higher profits, in spite of the recent unhappy times through which

the U.K. construction sector has been stumbling, because it saw what was coming and prepared itself in time.

In October 1973, the group chose a period of consolidation, as the annual reports would put it, and turned down no less than £40m. worth of development projects in order to contain borrowings.

At the same time, some other construction groups were already highly geared and facing severe cash flow problems but Sir Frank and his colleagues had serious doubts about the outlook for development work and decided to contain operations in order to remain "nicely liquid."

Joint venture

Taylor Woodrow, like many of the large civil engineering contractors, had in any case protected its interests by spreading its large workload not just over a wide job area but also in a geographical sense.

For the next two years at least, the group sees little improvement in demand at home and will continue to search for work overseas. At the moment, about 60 per cent. of group turnover comes from abroad, although the figures could easily have been reversed had the U.K. market been brighter.

Apart from the obvious overseas markets like the Middle East, the group is active in many other parts of the world and is now examining potential markets in the developing nations, particularly parts of South America.

Like some of its competitors, the group has realised that in order to win the really large contracts now available in many of the developing countries, even its own impressive resources are not sufficient to cope and it has teamed up with other contractors—notably Costain—to carry out major programmes overseas. In joint ventures the two groups are now carrying out work valued at over £280m. in Dubai.

Sir Frank, who still travels twice round the world each year "to keep in touch," believes that joint venture work is here to stay and that the British have been dragging their feet.

Taylor Woodrow is particularly proud of its own success in the United States, a notoriously difficult market for foreign contractors to penetrate because of the breadth of experience which the Americans have built up for themselves.

As well as identifying and winning work in expanding markets, the group is also committed to research and development work on new technologies, such as the harnessing of sea and wind power, nuclear power and offshore oil exploration, so that it can remain abreast of the times in terms of engineering and construction expertise.

Sir Frank adds: "The biggest danger facing the group is that its past successes should lead anyone to imagine that the future is sown up. The international civil engineering sector is fiercely competitive and we have to stay on our toes"—an apt message from a man who keeps reprints of an article on the importance of exercise for the management executive, to be handed out to anyone showing signs of a sore throat or snifle.

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The six overseas Heads of Government invited to the Downing Street talks: President Carter, Chancellor Schmidt, Mr. Fukuda, President Giscard d'Estaing, Mr. Trudeau and Sir Anthony D. Amey

# Carter comes to London

THE MOTIVATING force produced dramatic common which prompted the holding of the first economic summit, at Rambouillet in 1975, was the widespread sense of alarm and disarray experienced in many countries in the aftermath of the quadrupling of the price of oil.

The participating governments were sufficiently satisfied with that first meeting, to hold another, last year, in Puerto Rico; at the very least they may have felt that the staging of a second summit was an effective way of symbolising to their electorates at home, who may have been disturbed at the durability of inflation and recession, that these were international problems and were being taken seriously.

### Problems

In retrospect, it is difficult to feel confident that either of the previous meetings produced anything resembling a collective approach to the problems of the economic order. In practice, the immediate financial flows generated by the oil price increase were handled by the commercial banks and by the major capital markets, not by any grandiose "recycling" schemes.

This is not to suggest for a moment that the first two economic summits were not useful meetings in some less tangible sense, nor to imply that this week-end's gathering in London will not be a valuable occasion. For one thing, while the summits have not so far

The seven-nation summit meeting which opens at No. 10 Downing Street to-morrow is the third of its kind. It is also by far the most important. Not only is it the first opportunity for some of the Heads of Government to meet President Carter, it is also the first time that such a meeting has been attended by a new and activist U.S. President.

Although it is not required to produce dramatic short-term results, what is said over the table this week-end should go a long way to determining the extent and style of Western co-operation over the next few years.

The origins of the meeting go back to the oil crisis and the shock of the Middle East war in October 1973. There was a feeling even before then that the machinery of international co-operation, and especially international economic co-operation, as it had developed since World War II, was inadequate to deal with new problems.

### Too serious a matter

To return, however, to Helsinki 1975. The idea was canvassed there by Mr. James Callaghan—then the British Foreign Secretary—

It was the oil crisis, however, which led to Herr Schmidt's forebodings being more widely shared. There were fears not just of the effects on the western industrialised economies of sharply increased oil prices, but also of the effects of OPEC surpluses on the international financial system.

Yet the idea of a western economic summit meeting was formed both slowly and deviously. It first came to light—of all places—at the Heads of Government meeting of the European Security Conference in Helsinki in the summer of 1975.

The particular butt of that exercise was Mr. William Simon, then the U.S. Secretary of Treasury, who, it was judged, would give priority to the control of inflation rather than the reduction of unemployment, and whose views on world economic order differed significantly from those of the then Secretary of State, Dr. Henry Kissinger.

# Profit targets in the Post Office

THE VIEW that large profits are something to be ashamed of, especially in the nationalised industries, has been reinforced this week. The Price Commission has ruled that Post Office Telecommunications exceeded its permissible profit ceilings in the year to March, 1977, and must therefore return £100m. to its customers by way of rebate.

At the end of last year the Government set a new target for the telecommunications business—a 6 per cent. real rate of return on assets in the three years from 1976-77 to 1978-79. This was a welcome change after a long period of uncertainty caused by successive policies of price restraint which made the earlier profit targets virtually meaningless.

# MEN AND MATTERS

### Desirable residence

If you have to spend the week-end working, it might be some consolation to do so in a room designed by Sir John Soane with a lofty vaulted ceiling. These are the civilised surroundings of the state dining room at 10 Downing Street where the economic summit conference will be held to-morrow and Sunday.

There should also be pictures of some of the brightest names in Britain's history (Nelson, Wellington, Fox and Pitt) peering down from the walls, plus an Adam sideboard and chairs which are copies of an original set designed by Adam and built possibly by Chippendale.

The cost of equipping Downing Street for the conference is put at £43,000. Anyone grumbling at that should be pleased that No. 10 is, in a sense, to start producing some revenue with the publication by the Government to-day of a souvenir guide to the place.

The history of No. 10 is both apposite and dubious. The site was acquired by one George Downing, who proved his Parliamentary credentials by being Oliver Cromwell's Scoutmaster-General, the guide interpreting that as "Chief of Intelligence."

### Giddy heights

Fuel saving, as President Carter can attest, is a tricky business. Airliners on the 14-hour flight from New York to Japan have been flying up to 45,000 feet to conserve fuel.

Is the problem "ozone sickness"? The argument is that the planes may have passed through the Earth's ozone layer where the normal oxygen molecule consists of three atoms of oxygen instead of the usual two.

Accountants can deal, it seems, with deflation as well as inflation. Look at their approach to time: the profession's rules on post-qualification education include the suggestion that "each completed period of 50 minutes' attendance at an accredited course will count as one hour."

Accountants can deal, it seems, with deflation as well as inflation. Look at their approach to time: the profession's rules on post-qualification education include the suggestion that "each completed period of 50 minutes' attendance at an accredited course will count as one hour."

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habit of U.S. customers, said yesterday its aircraft were now flying lower and taking their air in from a hotter part of the engine, too. Asked whether British Airways had heard of the problem, a spokesman dismissed it helpfully as "a load of rubbish" before checking and reporting that it had not come up among passengers' complaints.

Observer

## OFFICE OPPORTUNITIES

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DARLINGTON	Northgate House	47,000
FOLKESTONE	Europa House	18,000
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NEWS TO-DAY

BY DAVID WATT

# Devolution calculations in Scotland

THE Government's activities on the devolution front—the only other major factor which would account for the discrepancy—has paid off to some extent earlier in the week. Whether Labour would have stemmed the tide still more if expected large gains making progress through the House of Commons is naturally impossible to say, but there will be some presumption from these results that the Government had never been introduced. The objection to this line of argument is that devolution as such never figured in the local election campaigns. This is surprising, of course, but not in my opinion the swing away from the Government was not larger. SNP is inseparable from the issue, and even though the SNP did not fight a campaign "about" the Government's overall record (in so far as it was not about purely local issues), it is hard to believe that it did not have some influence on the result.

The question, if this premise is accepted, is whether the results will affect the calculations of the various parties, as they take the next step on the path of "swinging" means anything in local government. The Government is evidently determined to publish a new Bill in the late summer or early autumn and reintroduce it in the next session of Parliament; but what will be in it, and who will vote for it?

The Cabinet, in so far as it considers devolution at all (and it has not, it seems, discussed the subject formally since the Scotland and Wales Bill collapsed) continues to think in purely party terms. Ministers believe that bringing the Bill in again will shore up the Government's parliamentary position in one of two ways: it will

either cement the Lib-Lab pact for a further period because it will offer the Liberals the prospect of a really tangible prize; or alternatively, if the cards are played wrong, it will force the SNP to resume overall support for the Government in Parliament lest the party is accused in Scotland of scuppering the last real chance of an Assembly before the Thatcherian night falls.

This points to the desirability of putting together a new, brighter and more radical devolution package as quickly as possible; and this week's election results will certainly not have diminished that ministerial impulse. And yet there are two major snags, neither of which the Government can do much about.

The first problem is that the SNP may not play ball. It might well refuse to preserve the Government from defeat, however forthcoming on devolution the Cabinet decides to be. For the fact is that the party is deeply divided already about how to proceed. Mr. William Woofie, the chairman, and Mrs. Margo MacDonald, the senior vice-chairman, urge caution and moderation. Let us, they say, encourage the Government to set up its Assembly; let us capture control of it and then let Scottish public opinion come to realise through the frustrations of the new system (as so far the majority of opinion does not) the logic of complete independence.

This strategy would certainly entail keeping Mr. Callaghan in office for as long as there was any real prospect of his producing an Assembly; but unfortunately it is a policy which is challenged on a fundamental



The Queen and members of the Royal Family at a garden party at Holyrood House, Edinburgh

grounds by the other wing of the party. The hard-liners, of whom Mr. Douglas Henderson, the MP for East Aberdeenshire, is the most forceful, apparently argue that the party ought to seize opportunity by the scruff of the neck. The thing is to bring down the Government as rapidly as possible. The Assembly is irrelevant. Constant agitation, aggressive propaganda against every aspect of the Union and, above all, election work are what bring in supporters and commit them permanently to the SNP. A general election is far the best thing for the party; and if Mrs. Thatcher wins, well, then, the

subsequent opportunities for profitable political activity will be all the greater.

The struggle between these two views will come to a head in three weeks' time at the SNP's annual conference at Dundee, where Mrs. MacDonald is being challenged for her vice-chairmanship by forces of the opposite persuasion. But even if she wins, she and Mr. Woofie are at a disadvantage in not being Members at Westminster. It is hard for them, at a distance, to restrain the predominant tendency of the party's MPs which is naturally for adopting the tactics of harassment and confrontation with the Government which are most likely to get them headlines in the Scottish Press.

The other possible flaw in the Government's calculations is even more basic. Can any devolution Bill get through the House of Commons. In order to have any chance at all with a second Scottish Bill, Mr. Michael Foot will have to swallow two mildly unpleasant doses. One is the shelving of the Welsh part of the exercise until some indefinite date, the other is the introduction of a guillotine motion at the very start of the proceedings. But not at all certain that the votes are to be bought on any terms. The Party pressure on the Tory

still faces the problem of how to get a guillotine motion past the Opposition which defeated it by 29 votes in February.

It should be easy enough to persuade the 11 Liberals who voted against the guillotine on that occasion to change their minds, though their terms are also unpalatable to Mr. Foot and the Civil Service—taxation powers for the Scottish Assembly; judicial review in the case of a dispute over the division of powers between London and Edinburgh; and the entire rearrangement of the Bill so as to list exceptions to devolution rather than trying to list all the devolved powers. Steel could claim at least some advantages from his illicit liaison with the Government.

Yet this would still not be enough to win the crucial division—particularly since the emendations required to meet those which will most enrage the rebel English Labour MPs from the North and North-East who undid the Government's calculations last time. It is clear that the Bill cannot pass without some Conservative votes—presumably those of the 29 Tories, including Mr. Heath, who previously abstained.

Can these be turned round? Some of them maintain that their price would be a reduction of Scottish representation at Westminster—a condition which the Cabinet, with its traditional Scottish majority, will be loath to concede. But in any case the whole atmosphere in the Conservative Party has changed so much since February that it is very well possible that the votes are to be bought on any terms. The Party pressure on the Tory

Both these views seem to me deeply mistaken. Four out of five of the six inter-locutors are in the direct political difficulties at home, and if they cannot get out of them it is not only their necks that are at risk. The strength, prosperity and (in the case of Britain and Canada) the very existence of their countries is bound up with their own political fates. In this sense Britain is actually very lucky. Our political institutions are still connected with the real world and in managing them our politicians can manage events. The levers of power still set the points, and Mr. Callaghan, if he pulls the right ones, can still keep himself and a U.K. on the rails. The summit meeting is all very well; but international statesmanship is based, ultimately, upon the black arts of domestic political management.

## Letters to the Editor

### Paying for services

Mr. S. Watkins, Council member, Medical Practitioners' Section, Association of Medical, Technical and Menial Staffs.

Samuel Brittan (London 3) accuses those of us who believe that essential services are most efficiently provided of general taxation of being wrong.

He argues that public sector borrowing must be cut, that the public sector cannot be increased, and that public expenditure must be reduced and therefore that services must be cut unless charges are made. The British Medical Association and other National Health Service workers "we can't raise enough by taxation," then "let us raise the money by means of charges." There would be no doubt that charges would be suitable, especially for those unable to afford charges, but those who can afford to do so would pay towards their care. No doubt they would protect themselves by buying out an insurance policy, which they would almost be able to pay for with the money saved in taxation.

### Profits on the Standard

Max Wilkinson's review April 30 of the incredible circumstances which have brought Beaverbrook Newspapers to its present plight does less than justice to many local managers who turned in good profits without Joejery Stevens' help.

For example, the year preceding his appointment as its managing director, the Evening Standard had been turned around to an excellent profit, without the benefit of an increase in its cover price. The record was set right once before in your columns by a letter from Sir Max Aitken.

### Motivation at Westminster

Mr. D. Morris

—If leadership by example means anything then for any policy for Stage III to be a success our leaders should apply it to themselves. No doubt the most suitable norm to live on would be the current average pay. MPs could then experience the day-to-day living problems of their average constituent.

If constituents need motivating then why not motivate MPs as well? On top of the "plus expenses" I would advocate £1,000 extra for the GNP each year.

David C. Morris, Allipond and Co., 21, Soho Square, W.1.

### Added value and dividends

Managing Director, Charterhouse Management Costrax.

—I would point out to your correspondents who have waxed so eloquently in your columns recently on the subject of added value, that as company law

## Letters to the Editor

### Executive job recruiters

Mr. E. Lewis

—So job recruiters doubt the logic of many of those who seek new job opportunities (Michael Dixon's Jobs Column April 14).

For a start, one cannot quarrel with their views on correspondence and common courtesies, but when it appears that recruitment consultants do not keep registers of suitably qualified people, and that this is considered entirely businesslike, efficient, and logical, one begins to lose track of the argument. We obviously misunderstand how a recruitment agency works, and I cannot feel the fault is entirely ours.

Many executives-to-day are so intimately acquainted with modern business systems that it is natural for them to assume that recruitment companies have access to sophisticated computer memories which print out long lists of candidates at the press of a button. Since this is clearly not the case, by deduction we must assume that the average agency is a sort of "cottage industry," relying on beautifully worded advertisements, contacts at establishment level, a card-board filing system, and half-a-dozen employees!

It seems that vacancies are so minute in relation to the numbers that apply, that the would-be applicants is given the impression that although highly valued and remunerated in his present job, he is almost worthless anywhere else; possibly a fact of life but disconcerting (and soul-destroying) for people who know they could contribute much more to a better and more efficient economic system.

In short, recruitment companies contribute with a vengeance to the no doubt theologically correct view that although many are called, few are chosen, but unfortunately this does not overcome the damage that can be done if too many qualified people are given the impression, which I believe to be misleading, that no open market exists for economically valuable skills.

B. A. Lewis, 47, Woodlands Avenue, New Malden, Surrey.

### Grants for insulation

Mr. E. Ambrose

—My appeal (April 23) to the Prime Minister to do a "Jimmy Carter" and tell us he will make grants for insulation to keep us in step with our friends was answered by Mr. J. J. Wisdom (April 30) who feels it is I who am out of step because I did not call for a proper control of heating systems.

Of course control is important but it is a vast subject involving the source and type of heating; not all systems use radiator valves. I referred to BS 5250 (control of condensation) and lamented its general lack of public and private readership. If Mr. Wisdom will turn to para 202 (and I hope others will follow him and read on) he will find "The charging period should be related both to the need of the occupants and to the need for an adequate reserve for heating the house fabric." Without insulation this is impossible—and it constitutes the nub of the conservation/anti-condensation problem.

Eric Ambrose, Maccob, The Ridgeway, Mill Hill, N.W.7.

### Unwanted cash

Mr. K. Leventon

—I followed, with great interest, Mr. Carter's investment policy articles earlier in the year, because I have used the same system, but with less success over a similar period of years. There is, however, one problem from which the small investor suffers. I am thinking of the situation where a company's shares are taken over for cash, which enforces a capital gain together with the reason, when normally the small investor sells parcels of shares at under £1,000 to avoid tax. This situation is particularly annoying if it occurs at the end of the financial year and attracts capital gains tax on a transaction under £1,000 carried out voluntarily in the early part of the tax year; for example, I have recently had Mr. dechoud Investment Holdings shares taken over for cash where I particularly wished to hold these shares because of possible building land values in the Burgess Hill district.

Surely there should be a change in the law forcing companies always to offer the shareholder an alternative of shares instead of cash.

K. B. Leventon, 1, Grande Court, Blackheath, S.E.3

### Speed and fuel consumption

Mr. A. Bythway

—I am seriously concerned at the emotive letters from Mr. Gordon (April 27) and Major Sutton (April 30) attempting to deny Joe Rogaly's article of April 22.

I feel it might be helpful if the questions of safety and fuel saving were considered entirely separately, since my own experience of driving slowly in the latter context is totally opposed to theirs and tends to support Joe Rogaly and President Carter's views.

Over the past 20 years or so I have owned three 2.2 litre, one 3.3 litre and (for the past four and a half years) one 1100 cc cars. My wife has had two 1600 cc cars in the past four and a half years. All of these

## To-day's Events

- Dr. David Owen, Foreign Secretary, holds talk in London with Mr. Cyrus Vance, U.S. Secretary of State.
- Mr. Joshua Nkomo, African Nationalist leader of African Nationalist Patriotic Front, who arrived in London last night, is expected to meet both Dr. Owen and Mr. Vance.
- President Carter and Prime Minister visit North East England.
- St. Altiero Spinelli, a founder of European Federalist Movement in Italy and a former EEC Commissioner, speaks at "Federalism and the Left," Royal Society of Arts, John Adam Street, W.C.2, 3 p.m.
- Amalgamated Union of Engineering Workers' engineering sections conference ends, Eastbourne.
- Journalists on strike at East Midlands Allied Press, Peterborough, meet to discuss further support for their NUJ colleagues in dispute at Kettering.
- Last day of TERO 77—Profit through Care Conference, sponsored by Department of Industry Committee for Terotechnology, Grosvenor House, W.1.
- International Radio Communication Exhibition and Conference opens Alexandra Palace (until May 9).
- PARLIAMENTARY BUSINESS House of Commons: Private Members' Bills.
- Philips' Lamp Holding (first quarter).
- COMPANY MEETINGS Alliance Trust, Dundee, 11.30.
- British Aluminium, 7, Baker Street, W. 10.30.
- Collins (William), Glasgow, 11. Jacobs (John), 11.30.
- Edie Exchange, E.C., 11.30.
- Montagu Boston Investment Trust, 117, Old Broad Street, E.C. 12, 12.00.
- Pye Holdings, Hyde Park Hotel, S.W., 12.05.
- Ransomes Sims and Jefferies, Ipswich, 3. Scottish Television, Glasgow, 12. Sharna Ware, Manchester, 12.30.

is also

**SCOTLAND'S 1st AND MOST SUCCESSFUL NEW TOWN IS PARTICULARLY PROUD TO CELEBRATE ITS OWN SPECIAL ANNIVERSARY IN THIS ROYAL YEAR OF 1977**

**E**ast Kilbride five years before the Coronation was a community of 2400 people: an outlying village south of Glasgow set amid green fields at the end of a winding single track railway.

A generation later, there are still green fields all around E.K., and open space within the New Town. The village in the country remains.

But East Kilbride has grown. Not out of all knowledge, but according to plan. At its own Silver Jubilee, the population had reached 50,000; by 1975, East Kilbride was Scotland's sixth largest town or city; today the six separate village communities which make up the New Town provide ideal living conditions for more than 76,000 people.

In the industrial estates, nearly 350 companies employ some 20,000 workers, with new companies setting up on an average every 11 days, and expansion of existing companies occurring as a fortnightly event. Growth continues.

East Kilbride has much to celebrate in this Royal Year of 1977. A generation of success. Thirty years of New Town leadership. And the prospect of a future which will make it more successful yet.

**EAST KILBRIDE & STONEHOUSE DEVELOPMENT CORPORATION**  
ATHOLL HOUSE EAST KILBRIDE SCOTLAND G74 1LU

**SILVER JUBILEE YEAR 1977 · SILVER JUBILEE YEAR 1977**

COMPANY NEWS + COMMENT

Whessoe expects to top £2.86m. this year

CURRENT year pre-tax profit of engineers Whessoe should exceed last year's record £2.86m. Lord Erroll of Hale, chairman, forecasts in his interim statement. For the half year to March 26, 1977, taxable profit improved from £0.88m to £1.25m on sales up from £17.2m to £19.94m.

INDEX TO COMPANY HIGHLIGHTS table with columns: Company, Page, Col., Company, Page, Col.

And the directors anticipate record results for the year if there are no political eruptions. The previous year's profit figure was £186,000, just £77,731 below the peak level of 1975/76.

Breedon Lime confident

MR. P. H. LLOYD, chairman of Breedon and Cloud Hill Lime Works, says he is satisfied that the company has succeeded in establishing a sound financial base which will enable it to take advantage of any upturn in trading activity.



Sir James Blair-Cunynghame, chairman of National and Commercial Banking.

DIVIDENDS ANNOUNCED

Table listing dividends for various companies including Aberdeen Constr., Brixton Estate, F. W. Evans, Guardian Inv., etc.

Dividends shown pence per share net except where otherwise stated. \*Equivalent after allowing for scrip issue. †On capital increased by rights and/or acquisition issues. ‡To reduce disparity.

Brixton Estate increase

FOR 1976, the profit of property developers Brixton Estate rose by 20 per cent from £1.62m to £1.95m, and net rental income increased to £4.53m, against £3.11m.

Brixton Estate increase

Substantial benefits from reversions are beginning to arise and the directors expect that this trend will continue. The directors say that since the year end domestic interest rates have fallen, and there has been a marked increase in letting enquiries which makes the outlook for 1977 more encouraging.

comment

For the first time Brixton is disclosing the full extent of its interest burden by including interest on overseas developments in the revenue account. The 1976 charge is adjusted but even so higher rates pushed up the interest cost on development properties by 38 per cent to £2,300m, while gross profits are just under £2m.

comment

The preliminary announcement and the publication of the report and accounts Breedon and Cloud Hill Lime Works has once again changed its accounting procedures—back to the previous year's policies. A £30,000 gain on the sale of quoted investments included in the pre-tax figure at the preliminary stage has now moved below the line where it is strictly comparable with a similar sized loss in 1976.

ended March 31, 1977, compared with £1.82m. Earnings per 25p share are shown as 2.38p (2.05p) and the dividend is lifted to 2.35p (1.98p) with a net final of 1.6p.

extraordinary debits of (£72,000) the balance attributable to ordinary holders emerges at £439,000 (£71,000). Earnings per 25p share are stated at 5.4p against 1.5p.

comment

Whessoe fell 7p to 75p yesterday with the market clearly disappointed with the profits forecast for 1978-79 rather than the interim results. After all, no more than maintained profits in the current six months would produce £2.1m pre-tax overall, a high incidence of contract completions largely explain the upsurge in heavy engineering.

comment

Funds are currently available for all existing commitments. The directors say they are continuing to look for new schemes in the U.K. and Europe and a number of proposals are being considered. For 1978 the directors state that the unwillingness of business in the U.K. to take on new leasing commitments and high interest rates are likely to depress the market, and abroad there was a slack letting market.

comment

The dividend is stepped up from 1.705p to 1.8804p, the maximum allowed, with a net final of 0.8517p net. A scrip issue of one-for-10 is proposed and the directors expect to maintain the present rate of dividend on the increased share capital for 1977.

F. W. Evans heading for peak year

Sales of plastic moulding manufacturers, Frederick W. Evans, improved from £61,000 to £78,000 in the half year to March 31, 1977, and pre-tax profit was up sharply at £132,000 compared with £52,000.

United Wire over £0.9m. midway

THE GOOD first half forecast at the AGM in January has materialised at United Wire Group with pre-tax profits showing an advance from £324,000 to £386,000 for the six months ended April 2, 1977. And this trend is expected to continue.

comment

A volume rise of around a quarter has enabled United Wire to continue the rapid growth achieved in the second half of 1976-7 and appears to have put the group on course for a best ever full year profit of around £1.3m. United's record is patchy but it has been concentrating on changing its emphasis away from the volatile paper industry over the last few years.

E. FOGARTY

E. Fogarty is proposing a scrip issue of one-for-three.

comment

Interest and outgoings on properties will not affect the net profit as the corresponding transfer from capital reserve was increased by a similar amount.

comment

The directors report that all divisions have contributed to the increase. The South African companies are less busy due to the local recession, while the U.K. companies continue active but the trend is to a shorter order position.

Guardian Inv.

Gross income for Guardian Investment Trust rose from £2.35m to £2.7m, and pre-tax revenue increased to £2.1m for the year

Marginal fall by James Neill

ALTHOUGH turnover increased from £25.67m to £28.08m, profit before tax of James Neill Holdings, the Sheffield-based hand tools and engineering group, fell marginally from £1.5m to £1.05m in 1976.

At half-way, when profits were down from £1.49m to £1.05m, Mr. J. Hugh Neill, chairman, said the outlook for the second half was that both sales and profits would increase. The full year's results would not fall short of those for 1975, he forecast.

He now explains that the full year decline was due to lower trading profits from overseas companies and higher interest charges.

However, he adds that the directors are expecting the group's U.K. companies to achieve substantially higher sales in 1977 and that the electronic micrometer is expected to be a significant improvement in profitability.

Yearly earnings per 25p share are given at 5.7p (5.3p) but in view of the bright outlook the dividend is stepped up from 4.31p to 4.76p with a final payment of 2.76p-net.

Table with columns: 1976, 1975, 1974. Rows include Turnover, Export sales, Trading profit, etc.

Mr. Neill points out that although profit available for distribution amounted to £796,000, this is after charging £1,270,000 tax of which £1,138,000 is covered by stock relief and is not payable in the foreseeable future.

Overseas companies trading profits were down by a third. In Brazil, the company was faced with heavy development costs in the installation of a hawkeye blade plant. In South Africa, the sluggish economy inevitably affected the level of activity and hence the profitability of the group's manufacturing plant.

Also the two North American marketing companies found themselves in particularly difficult circumstances as a result of export prices increasing to absorb higher costs at a time when the prices of American competitors were "remarkably" stable.

Interest payable was up by a third. This was due partly to increased borrowing (up by £2.4m over the year) and partly to the exceptionally high rates of interest which have since fallen "substantially," says the chairman.

Mr. Neill reports that capital expenditure in 1977 will not fall far short of the record £1.4m, which went on buildings, plant and machinery in 1976.

Wemyss estimates £421,000

FOR THE year to September 1977, Wemyss Investments Corp. estimates that pre-tax revenue will rise from £378,000 to £421,000.

Earnings per £1 share are forecast at 10.79p (9.88p) and interim dividend of 12p (special of 2.5p to 4p net to reduce disparity with the final (which last year was 6.7p).

Net asset value will be 36p (33.8p). Estimated 1976-77: Total income £50, Management exp. £2, Pre-tax revenue £42, Tax £10, Tax credits £7, Available for franked income £39, Applicable to franked income £39.

ECC BUYS English China Clay Co. of Norton Lime, £255,000, to be satisfied with issue of 456,424 shares at £138.751 cash.

Why institutions are turning to commodities

Many institutions today are investing a proportion of their funds in commodities with our help. And the table below shows some of the reasons why—commodities stand up to most investment criteria that institutions require.

Table comparing Investment Criteria (Research, Turnover, Marketability, Risk, Options, FT Index, Arbitrage) for Commodities and Equities.

If you are a fund manager who has not entered these markets, maybe you should think again. Over 60% of our business is conducted on behalf of institutions. As one of the leading commodity houses in London we are well placed to advise on the opportunities, including managed portfolios, available to undertake responsible investment in raw materials.

Commodity Analysis Limited. Commodity and Metal Brokers. 194-200 Bishopsgate, London EC2M4PE. Telephone 01-283 2201.

Advertisement for The Thomson Organisation Limited. 'The year found your company sound condition and with great promise for the future. I view your company's prospects with great optimism.' Lord Thomson of Fleet—Chairman.

Advertisement for The Thomson Organisation Limited. Group Results table comparing 1976 and 1975 performance. Includes text about investments in new technology and the company's outlook.

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# National & Commercial ahead to £31m. midway

THE SIX months ended March 1977, profits, before tax, of National & Commercial Banking Group rose from £28.3m. to £31.1m. and earnings per 25p share are shown to be up from 8p to 8.5p.

The first half profit includes a contribution from associates of £1.2m. to £1.4m. This rise is mainly due to the effect of the sale of Associated Securities in Australia which was incurring losses.

## Fairclough order book growth

Mr. Oswald Davies, chairman of Fairclough Construction Group, a civil engineering and building group, at the annual meeting said he was confident that there would be another £30m. of over-work coming into the group in the very near future, certainly for the year and.

## Good start for R. Cartwright

At the annual meeting of Cartwright (Holdings), Mr. R. Northam, the chairman, said £1.5m. (40.86m. increase).

## BOARD MEETINGS

The following companies have notified dates of Board meetings in the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available whether dividends concerned are likely to be paid and the sub-divisions below are based mainly on last year's practice.

Company	Date
Associated Portland Cement	May 12
British Overseas Airways	May 12
British Telecommunications	May 12
British Waterways	May 12
British Wool	May 12
British Airways	May 12
British Airways	May 12
British Airways	May 12
British Airways	May 12
British Airways	May 12

## Optimism at Davies & Newman

Although there are factors which can intervene at short notice to affect the results of Davies & Newman Holdings, Mr. F. E. Newman, chairman, reports that the outlook at present looks satisfactory.

In 1976 group pre-tax profit expanded from £1.8m. to £1.88m. The year has been a busy one for the shipbroking side. Revenue was steady but rising costs continue to erode profits in this section.

balances amounted to £1.13m. (£1.41m.)

## Aberdeen Constr. at £4.53m.

AFTER A midway advance from £1.52m. to £1.56m., Aberdeen Construction Group finished 1976 with record taxable profits of £4.53m. compared with £3.6m.

Profit includes a credit of £282,672 against £170,578 for regional development grants and a debit for finance charges of £11,407 compared with £56,290.

At the interim stage the directors said that in spite of difficulties maintaining turnover they anticipated a marginal improvement in profits for the full year. Turnover for 1976 fell from £54.43m. to £49.65m.

## AP Cement volume drop

Shareholders in Associated Portland Cement were told by Mr. J. A. F. Bling, the chairman, that sales volume at the end of 1976 was 28 per cent. under the peak demand of 1973 and that a further decline of "at least 10 per cent." could be expected in the current year over the 1976 figures.

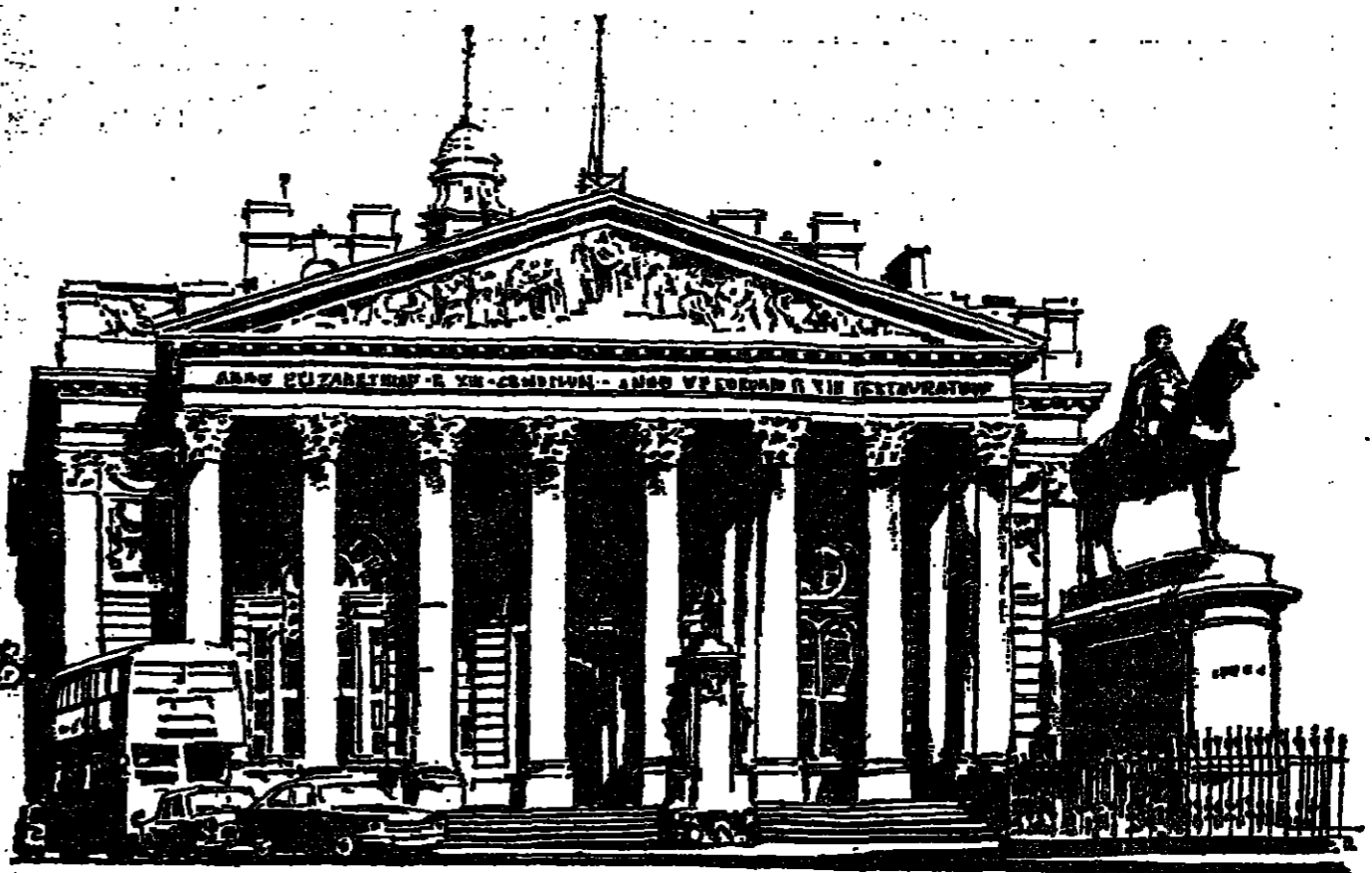
## Porter Chadburn tops £1.1m.

A sharp rise in pre-tax profit from £0.6m. to a record £1.13m. is announced by Porter Chadburn for the 53 weeks ended Jan. 6, 1977. In November last year the directors forecast second-half results "somewhat greater" than the first half £607,000 (£555,000).

Earnings per share for the year are shown to be up from 10.81p to 16.98p per 20p share—a second interim dividend of 3.41p lifts the total from 4.29p to 4.71p net, as forecast.

The improved cash flow has enabled the directors to embark on a capital expenditure programme amounting to approximately £9.5m., including some plant modernisation and provision of additional capacity, together with an extension of the production range in the brewery refrigeration field. This, together with attendant working capital, will be financed by existing resources.

LLOYDS BANK CONVERSIONS  
Lloyds Bank have received 40 applications from loan stock holders relating to the conversion of £37,041 of loan stock in respect of which 16,297 shares have been allotted in accordance with the Trust Deed.



# Guardian Royal Exchange Assurance

EXTRACTS FROM THE STATEMENT BY THE CHAIRMAN, J. E. H. COLLINS MBE DSC

**A Difficult Year**  
Insurance is a risk-taking business and although 1976 was a difficult year it is satisfactory that we have not only made an increased profit but have also made a larger profit on our basic business of short term underwriting.

**Underwriting Home**  
We were reminded early in 1976 of one of the factors that have made insurance planning so unpredictable in recent years—the natural hazards of weather, storm, flood and drought.

**Overseas**  
Whilst in the past few years the home account has made the largest contribution to our profits, in 1976 our overseas division produced excellent results in a number of territories and made a useful overall contribution.

**Life**  
The volume of new life assurance and annuity business continued to expand at home and overseas. The world-wide total of sums assured in 1976 at £2,420m is more than twice the figure we wrote in 1972.

**Marine and Aviation**  
Premium growth was inhibited by the slow recovery from the world recession of 1975. The volume of goods in transit failed to rise, ship values remained depressed in line with freight rates, and new ship orders declined.

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**Balance Sheet**  
During the year additions were made to all the major classes of investment although greater emphasis was placed on fixed interest stocks to secure the high yields available, particularly in the United Kingdom.

**Staff**  
Throughout the world the staff have during 1976 once again given us the support that we have come to expect. We do not take this for granted or as a matter of course, and the directors and I would like to make it clear that our thanks to them are no mere formality.

**Prospects for the Group**  
Last year I said I did not think that 1976 would be quite as good an underwriting year as the preceding year and I was happy to be proved wrong. We are only a little way into the present year, but unless there are many major disasters, or freak weather conditions, I think the results should again improve.

**Nationalisation**  
We have planned ahead for those business functions with which able and qualified businessmen can deal but regrettably there are some unpredictable factors arising from politics. I refer to the proposals put forward by an element in the British Labour Party for the nationalisation of a number of leading insurance companies and banks.

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# Brazil: agriculture's new giant.

## May we introduce you?

If, when you think of Brazil's exports, you think of coffee, you are only half right. Soyabean run it very close. In fact there have been years when soy actually overtook coffee.

people offers boundless opportunities to European businessmen. To this gigantic and expanding market the Bank of Brazil is your most knowledgeable and competent guide.

Twenty five years ago there was no commercial production at all. Today, with output of 13 million tonnes, Brazil is second only to the United States as a soyabean producer.

**BANCO DO BRASIL S.A.**

**Guardian Royal Exchange Assurance**

Small print text at the bottom of the page containing legal and financial details.



Joy 10 1976

# BICC to raise borrowings

THE FINANCIAL position of BICC is strong but the directors consider it necessary to plan for an upturn in economic activity and for consequential increases in working capital resulting from the strike of copper...

# Aurora's healthy state

READING in the current year at Aurora Holdings is satisfactory and Mr. Robert Atkinson, chairman, reports that the order book at the start of 1977 was a record...

# GRE looking for better result

AN IMPROVEMENT in 1977 results for Guardian Royal Exchange Assurance is predicted by Mr. J. E. Collins in his chairman's statement...

# Richards steady at halfway

PRE-TAX profit of textile manufacturer Richards was little changed for the six months to March 31, 1977...

### UNION MINIERE

Shareholders are invited to attend the Annual General Meeting which will be held on Thursday, 26th May, 1977...

# Heal & Son

Furniture manufacturers and retailers, Heal & Son Holdings, reports a decreased pre-tax loss of £252,241 for the year ended January 31, 1977...

# Wire & Plastic shows rise

A second-half pick-up by Wire and Plastic Products has lifted profits for 1976 from £248,947 to £283,232...

# "Overseas we have a most substantial and growing business..."

some extracts from the speech at the annual general meeting by the Chairman, Mr. J.A.F. Binny

**Tate of Leeds back in profit**  
Vehicle distributors, Tate of Leeds, has returned to profitability with a pre-tax profit of 106,294 for the year 1976...

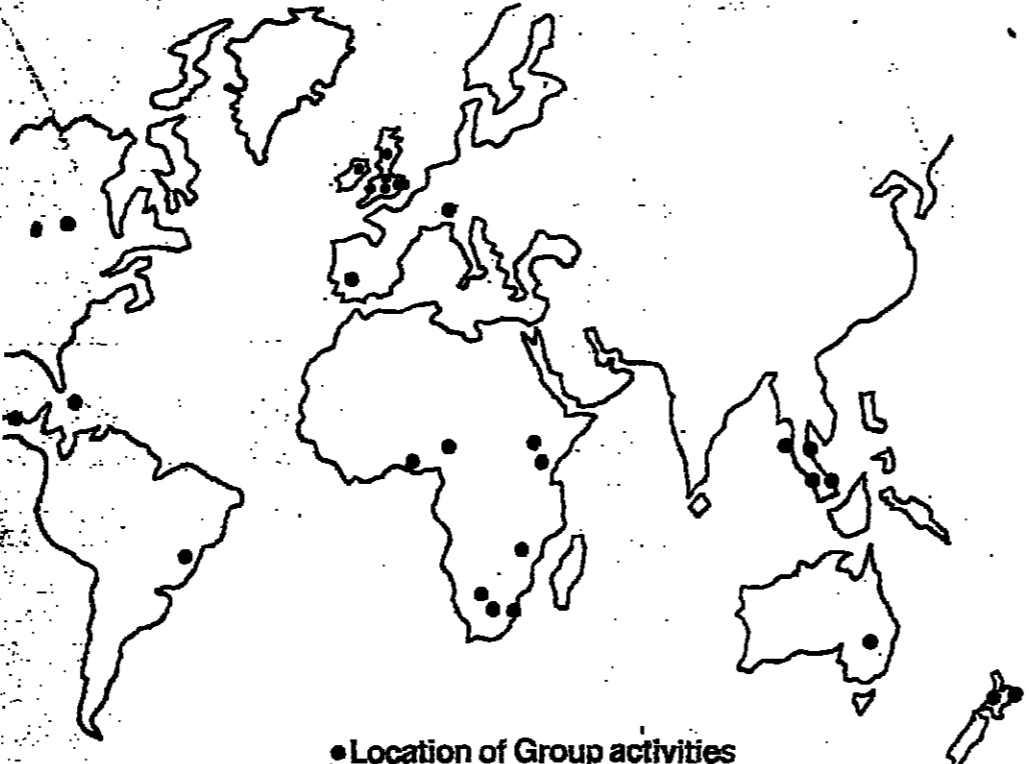
# "...with 54% of our profits in 1976 coming from our overseas subsidiaries and associates."

With the continuing decline in our UK business we must of necessity look to our overseas activities for growth in the next few years...

# "...the danger of price controls..."

Another subject which is causing us great concern is the rate of return on capital employed. As you know, our depreciation policy over the last 20 years has, to a certain extent, anticipated current cost accounting...

**Metalrax chairman confident**  
At the annual meeting a record of half and another excellent year for Metalrax (Holdings)...



In the overseas manufacturing operations many Group companies are planning expansion programmes and over the next few years we should begin to see the results of increased production...

**WAGON INDUSTRIAL**  
Wagon Industrial Holdings is buying Antocks Lahn Group, designers and manufacturers of furniture...

# "1976 was a difficult year..."

As you will be aware, 1976 was a difficult year for the construction industry in the United Kingdom. Lack of confidence, high rates of interest, and finally cuts in Government and local government expenditure...

Results for the year	1976	1975
Turnover	360.0	279.9
Profit before taxation	45.4	39.4
Profit after taxation	22.8	17.4
Earnings per £1 ordinary stock unit	22.8p	18.3p
Dividends paid and proposed per £1 ordinary stock unit	8.3644p	7.804p

# Horace Cory

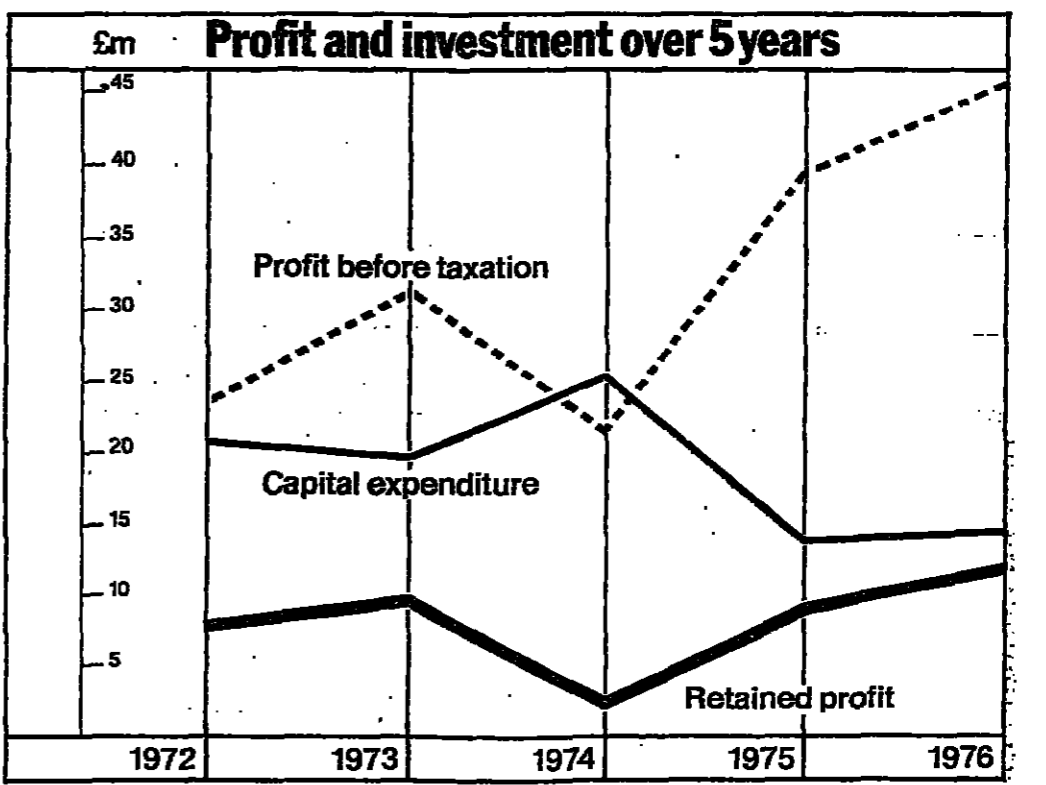
Mr. S. J. S. Fley, chairman, reports on 1976: \* Mr. J. H. Grimshaw who had dedicated his life to the service of the Company over a period of almost 50 years died on 14th March, 1977...

## THE ASSOCIATED PORTLAND CEMENT MANUFACTURERS LIMITED

### BLUE CIRCLE GROUP

Since the beginning of 1974 coal prices have risen by an average of more than 200%, electricity by nearly 90% and transport costs by nearly 80%.

The triggering force to enhanced efficiency is capital investment that builds new manufacturing facilities and replaces antiquated equipment. Over a period neglected replacement of existing capacity, inadequate expansion of new capacity, and postponed introduction of the latest and most efficient technology lead to declining profits...



Cement is still a very cheap commodity. It represents less than 2½% of the cost of a house, and in 1976 money values, costs less per tonne than it did in 1951...

To: The Company Secretary, The Associated Portland Cement Manufacturers Limited, Portland House, Stag Place, London SW1E 5BJ

Please send me a copy of your Report & Accounts 1976, together with the complete text of the Chairman's speech.

Name \_\_\_\_\_

Address \_\_\_\_\_



WALL STREET + OVERSEAS MARKETS + FOREIGN EXCHANGES
Early losses regained: up another 2.7 Gold lower

BY OUR WALL STREET CORRESPONDENT

EARLY LOSSES were more than regained on Wall Street today as the Dow Jones Industrial Average finished another 2.7 up at 943.44...

THURSDAY'S ACTIVE STOCKS: Occidental Petroleum, General Motors, Ford, Chrysler, and others.

OTHER MARKETS: Canada still rising, Swiss stocks, and international markets.

Indices

Table with columns for Index Name, May 5, May 4, May 3, May 2, May 1, High, Low, and % Change.

MILAN—Market drifted lower in trading, following the London market... AMSTERDAM—Shares generally eased...

Y.T.S. ALL COMMON

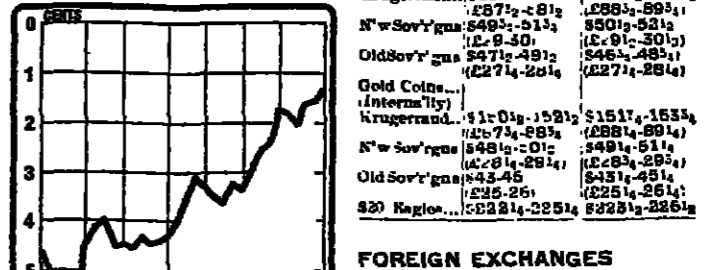
Table with columns for Stock Name, May 5, May 4, May 3, May 2, May 1, High, Low, and % Change.

EURO-CURRENCY INTEREST RATES: Table showing rates for various currencies and terms.

EXCHANGE CROSS-RATES

Table showing exchange rates for various currencies against the US Dollar.

GOLD MARKET



FOREIGN EXCHANGES

Table showing foreign exchange rates for various currencies.

RIGHTS RATES

Table showing rights rates for various companies.

FORWARD RATES

Table showing forward rates for various currencies.

AUSTRALIA

Table showing Australian market data.

BRASIL

Table showing Brazilian market data.

JOHANNESBURG

Table showing Johannesburg market data.

MINES

Table showing mining company data.

INDUSTRIALS

Table showing industrial company data.

OVERSEAS SHARE INFORMATION

Large table listing various international stocks and their prices.

NEW YORK

Table listing New York market data and stock prices.

TOKYO

Table listing Tokyo market data.

AMSTERDAM

Table listing Amsterdam market data.

PARIS

Table listing Paris market data.

SWITZERLAND

Table listing Swiss market data.

MILAN

Table listing Milan market data.

VIENNA

Table listing Vienna market data.

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INTERNATIONAL FINANCIAL AND COMPANY NEWS

Akzo reorganisation plan after first quarter slump

BY MICHAEL VAN OS

AKZO, the Dutch-based international chemical group, said its first quarter report published today that net profits had fallen to 51.1m, or 15.7 per cent of sales, from 67.7m, or 18.7 per cent, in the first quarter of 1976.

The company says that this development was largely because of a fall in prices of textile fibres and staple fibres, particularly in polyester, which was 33 per cent, to Fls.11.3bn. in 1976.

Mr. Krayenbrou, chairman of the board, said that the company's first quarter results were down to Fls.939m, compared with the first quarter of 1976, when sales were down to Fls.939m, compared with the first quarter of 1976, when sales were down to Fls.939m.

Loss at Estel may increase this year

BY OUR OWN CORRESPONDENT

AMSTERDAM, May 5. ESTEL, the Dutch-German steel combine, may make an even bigger loss this year than the 1976 deficit of Fls.63m, which was considerably flattered by an extraordinary credit from a revaluation of German fixed assets.

SIA expects 20% profit rise

BY H. F. LEE

SINGAPORE NEWS

SINGAPORE AIRLINES (SIA) expects to make an after-tax profit of \$50m in the current financial year ending March 1978, an increase of 20.6 per cent over the assessed 1976-77 figure of \$42.3m.

greater improvement in yield compared with unit cost increase. The airline expects its breakeven load factor to decline by 0.2 points to 57.6 per cent.

SIA anticipates an increase of 22 per cent in its total production capacity to 1.61bn. tonne kilometres, in view of the introduction of two new Boeing 747 and three Boeing 727 aircraft this year, the addition soon of two new destinations—Tehran and Copenhagen, and the introduction of regular freighter services from July this year to Europe, Hongkong and the West Coast of the United States with its own Boeing 707s.

DESPITE generally sluggish trading conditions last year, National Iron and Steel Mills—Singapore's only steel mill—put up a creditable performance, chalking a 19.1 per cent increase in pre-tax profit to \$511.5m in the year ended December, 1976.

Higher prices will lift sales to Fls.14bn. at Gasunie

BY MICHAEL VAN OS

NEDERLANDSE GASUNIE expects the value of its 1977 natural gas sales to rise around Fls.2.5bn. to almost Fls.14bn. it said in its annual report.

Domestic prices for small users will go up further on July 1 and export prices will also be raised as a result of the large changes in the international energy market due to the energy crisis.

Mr. Kardaun, managing director, said: "The gas price to the oil price in 1976 was 6.2 per cent, but total deliveries lagged behind the expected 96bn-plus cubic metres due to warm weather, the economy and energy saving."

AGC profits rise by 50%

BY JAMES FORTH

AUSTRALIAN Guarantee Corporation (AGC) has increased its dominance of the finance industry in the past three years, due to strong demand and inflation. This rapid growth is well ahead of other industry averages and has forced the company to maintain its gearing.

Alliance Oil capital reconstruction

BY OUR OWN CORRESPONDENT

SYDNEY, May 5. ALLIANCE OIL Development Australia, the oil and mineral exploration group, plans a capital reconstruction involving a \$A11.2bn. capital write-down of existing assets, fully paid 50 per cent shares will receive one fully-paid 20 cent share for every two 50 cent shares, while holders of the existing 50 cent shares paid to 20 cents will receive one fully-paid 20 cent share for each five partly-paid shares.

Upturn reported at Boustead

BY WONG SUIKONG

KUALA LUMPUR, May 5. BOUSTEAD HOLDINGS today announced a sharp rise in pre-tax profits to 8.66m, ringgits (£2m) for the year ending December, 1976, compared with profits of 5.74m, ringgits in 1975. Turnover was 72.57m, ringgits (£16.35m).

For its size AGC has had relatively little involvement in property, but its latest result is the after writing off losses of \$A6m, compared with \$A3.5m in the 1976 March half, largely because of the uncertainty in the property market, while uncollected interest not brought to account on overdue property loans totalled \$A2.8m, compared with \$A1.5m a year ago.

Trinkhaus result 'satisfactory'

BY MICHAEL VAN OS

TRINKHAUS AND BURKHARDT, the private banking house, said today that its first quarter results were "satisfactory" and that its total lending volume in 1976 as total assets slipped by 10.36bn. at the end of the quarter, from DM2.375bn. to DM2.302bn. at end-1976.

The recent blow-out at Ekofisk is not expected to cause further delay in the start of supplies in Gasunie and indications are they should now begin in first half 1977.

These supplies, under a contract with Phillips Petroleum Company, Norway, should have begun in October, 1975, but so far have been delayed by technical problems on the part of the producers, Gasunie said.

Spain raising DM500m. loan

BY FRANCIS GHIES

THE KINGDOM of Spain is raising DM500m. in the form of an eight-year fixed interest credit line from a consortium of German banks led by Westdeutsche Landesbank Girozentrale, the largest permanent issuing house in Germany.

Shareholders of Aktiebolaget Volvo

BY MICHAEL VAN OS

The Ordinary General Meeting of Aktiebolaget Volvo will be held in Gothenburg at the Swedish Trade Fair, Alstromersalen at 10 a.m. on Monday 23rd May, 1977. Shareholders who wish to attend the meeting should notify the Company by not later than 12.00 noon on Wednesday 18th May, 1977 either in writing or by telephone.

BANK OF AMERICA NATIONAL TRUST AND SAVINGS ASSOCIATION World Value of the Dollar. The table below gives the latest available rates of exchange for the U.S. dollar against various currencies as on Wednesday, May 4, 1977.

VOLVO Shareholders of Aktiebolaget Volvo. The Ordinary General Meeting of Aktiebolaget Volvo will be held in Gothenburg at the Swedish Trade Fair, Alstromersalen at 10 a.m. on Monday 23rd May, 1977. Shareholders who wish to attend the meeting should notify the Company by not later than 12.00 noon on Wednesday 18th May, 1977 either in writing or by telephone.

SELECTED EURODOLLAR BOND PRICES MID-DAY INDICATIONS. Table listing various bond prices including Straights, Eurodollars, and Convertibles.

Bank of America Eurodollar Libor as of May 5 at 11.00 a.m. Table showing Libor rates for 3 months and 6 months periods across various countries.

# Mr. Carter's offensive on human rights upsets Latin American dictatorships

BY HUGH O'SHAUGHNESSY, Latin America Correspondent

LATIN AMERICA, for years since the early 1980s got the idea that the U.S. administration would never complain of its conduct as long as it caused no international problems.

More than any other region of the world it is witnessing President Carter's offensive on the question of human rights and the chanceries of the hemisphere are buzzing with activity as Washington makes its new push. The tension between the U.S. and some of its Latin neighbours has not been so great for decades.

The Carter policy of embracing the human rights issue as one which could produce diplomatic dividends in Washington's relations with the Communist world and also satisfy an increasingly articulate lobby at home has of necessity called for action in Latin America.

For decades Washington had sought to maintain a status quo in Latin America which would halt the penetration of Marxist ideas and generally prevent the region becoming a nuisance while the U.S. was fully occupied with a set of problems ranging from World War II to the Vietnam situation.

This strategy necessitated open or covert diplomatic and military intervention on the side of politicians who could be relied on to look after short-term U.S. interests and against those who threatened to upset the status quo. Such interventions happened in Guatemala, the Dominican Republic, Brazil and Chile. It was not surprising that governments such as the Somoza dynasty which has been controlling the Central American republic of Nicaragua

## Democratic

Mr. Carter spelled this out most clearly to Latin Americans in a speech on April 14 at the Organisation of American States headquarters in Washington where he said: "Our values and yours require us to combat abuses of individual freedom, including those caused by political, social and economic injustice. Our own concern for those values will naturally influence our relations with the countries of this hemisphere and throughout the world, and throughout the world you will find this country, the United States of America, eager to stand beside those nations which respect human rights and which promote democratic ideals."

The Administration had already made the first moves in February when it cut aid to those governments which most notoriously disregarded human

rights, principally Brazil, Argentina and Uruguay.

These first moves have sparked off a hail of denunciations from the governments affected which have to a man complained of "U.S. interference in internal affairs" or America.

"Yankee insults to national sovereignty." Arguing that U.S. cuts in military aid to them were intolerable affronts Argentina, Brazil, El Salvador, Guatemala and Uruguay each renounced all U.S. military aid. (U.S. relations with Brazil, already strained by Mr. Carter's attempts to halt the Brazilian nuclear deal with West Germany, became particularly frigid.)

Chile, whose official U.S. aid was formally terminated last year, joined in the complaints and announced that henceforward it would be relying more on arms purchases from the not unsophisticated Brazilian arms suppliers. There were rumours from Brasilia that Brazil could start buying arms in quantity from the U.S.S.R.

It is clear that the row between Washington and the Latin American dictatorships about military aid has been about something symbolic rather than something of vital and concrete national interest. The amount of military aid renounced by the five countries came to less than \$75m., a tiny fraction of the combined military budgets.

The defences of even so small a country as El Salvador are not going to come tumbling down at such a trumpet blast.

The military aid question has however had two important political results. It has demonstrated that the U.S. is in fact willing to take a first concrete

step against the dictators, it has given encouragement to the human rights field he will have opponents of these dictatorships to go much farther in his pressure on the dictatorships of Latin America than he has gone so far, especially if he continues to interpret human rights not just as, say, the abolition of physical torture, but the reduction of "political, social and economic injustice" mentioned in his Washington speech.

But to increase the pressure he will have to intensify diplomatic and economic pressure on the offending Latin regimes to a point where the short-term economic self interest of the U.S. itself may be affected. Latin Americans have always been closer to the right-wing anti-Communists in Brasilia and Buenos Aires as relations ally run a large balance of trade between Brazil and Argentina have cooled with the U.S. The actions of Mr. Carter in separating himself from the Pinochet government have paradoxically strengthened China's position as one of the Chilean junta's most powerful friends.

Since General Pinochet's coup of 1973 and Chile's break with the Soviet Union, China, spotting an enemy of Moscow, has supported the junta with big purchases of Chilean products and large loans.

Neither the Soviet Union nor China would naturally choose to criticise Latin governments for human rights violations.

## Torture

The question now is will Mr. Carter press his human rights campaign any further? And how will the Latin dictatorships attempt to riposte if he does? There can be no doubt that if the U.S. President wants to

do anything effective in the human rights field he will have to interpret human rights not just as, say, the abolition of physical torture, but the reduction of "political, social and economic injustice" mentioned in his Washington speech.

But to increase the pressure he will have to intensify diplomatic and economic pressure on the offending Latin regimes to a point where the short-term economic self interest of the U.S. itself may be affected. Latin Americans have always been closer to the right-wing anti-Communists in Brasilia and Buenos Aires as relations ally run a large balance of trade between Brazil and Argentina have cooled with the U.S. The actions of Mr. Carter in separating himself from the Pinochet government have paradoxically strengthened China's position as one of the Chilean junta's most powerful friends.

## Carping

The hope that many Latin Americans harbour is that Europe will be able to offer them the sort of relationship free from criticism and carping that they are finding increasingly difficult to maintain with the U.S. In this context it must have been encouraging for them to hear from the Quai d'Orsay shortly after Brazil decided to refuse U.S. military aid that France was willing to sell them any arms they wanted. It was a sign that France would step in, as West Germany had already stepped in in the nuclear sphere, to supply products which were not available from the U.S.

But in Western Europe, as in the U.S., the opponents of the Latin American dictatorships are mobilising and are eventually hoping to prevail on European governments to adopt the same attitudes towards human rights in the region that Mr. Carter has done. Some are hoping that governments such as those in Chile and Argentina will eventually come to be treated much on the same terms as Dr. Vorster is now being treated. The attitudes of the Social Democratic leaders within the Socialist International which is now led by former Chancellor Willi Brandt are already hardening towards the dictatorships of the region.

It is possible that politicians and businessmen in Western Europe are on the verge of a debate about relations with Latin America comparable to the one already started in the U.S.

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Edited by Peter Quennell and Alan Hodge

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THE MALAYAN RAJ: the British Straits Settlements until independence A. J. Stockwell

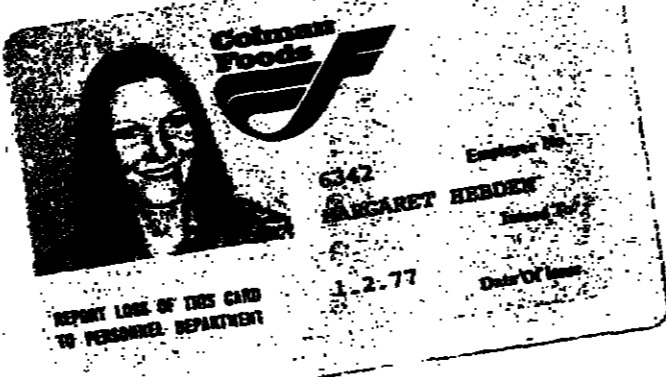
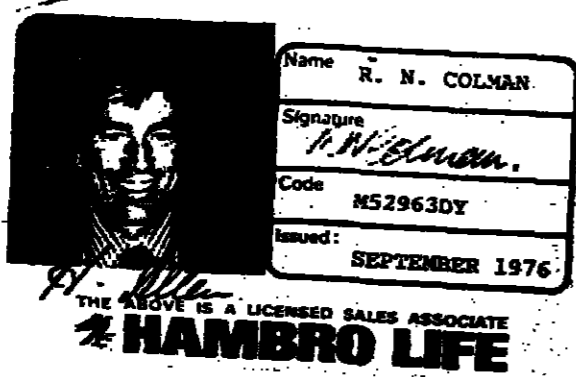
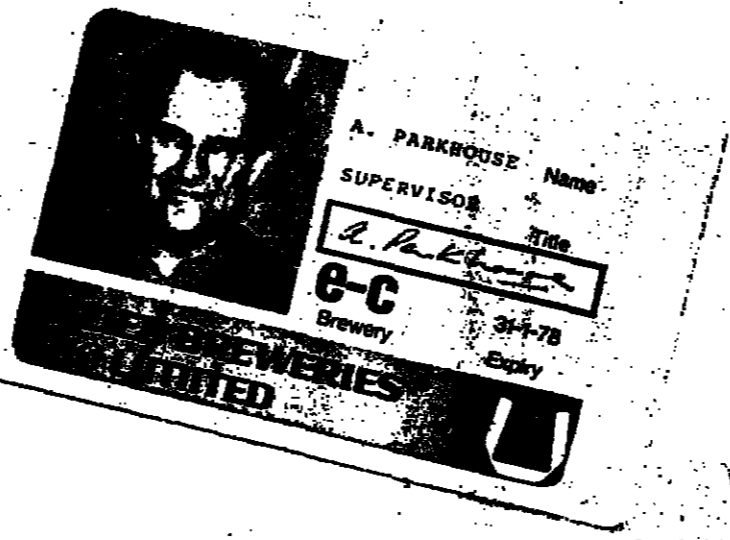
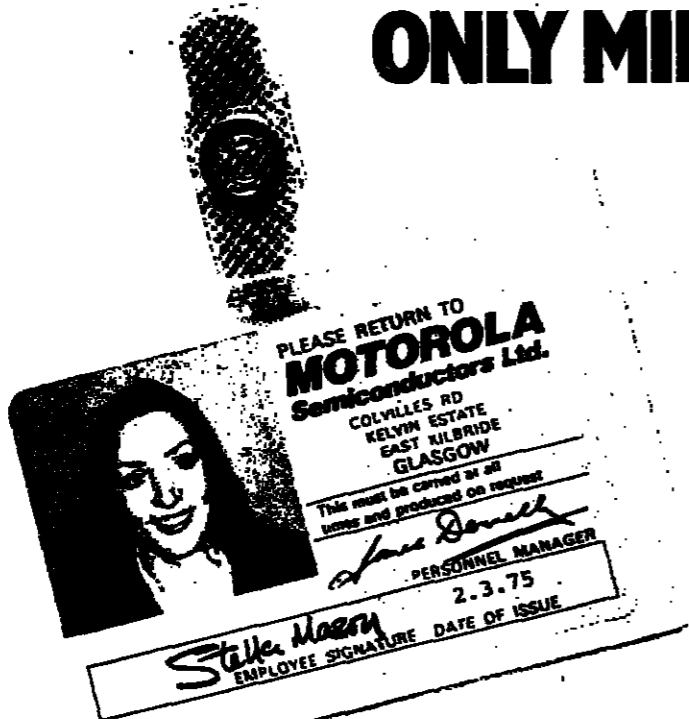
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FARMING AND RAW MATERIALS

opes for EC sugar compromise

Our Own Correspondent
GEORGETOWN, May 5.
GEORGE KING, Guyana's minister, expressed optimism that a compromise would be reached when the sugar negotiations between the EEC and African, Caribbean and Pacific countries resume on May 6.

British bacon to cost more next week

BRITISH PRODUCED bacon should be dearer in the shops next week following a 230 rise to 935 a tonne in the first-hand price. Irish and Ulster prices have been raised 110 to 930 a tonne.

Sharp fall in coffee market

CONCERN over possible consumption cutbacks brought a further sharp fall in coffee futures prices yesterday. By the close the July position was 227.5 down to 53.195 a tonne.

RURAL BRITAIN A different breed of villager

BY JOHN CHERRINGTON, AGRICULTURE CORRESPONDENT
STRAW BURNING is a perfectly logical agricultural practice. It is almost impossible to start any form of small-scale industry in rural areas without the presence of a few farm buildings.

Shetlands call for 50-mile fishing limit

Our Commodities Staff
LAND MUST have a 50-mile fishing limit to secure its economic future, the Shetland Islands Council said yesterday.

Hunt family seeks soyabean injunction

BY STEWART FLEMING
NEW YORK, May 5.
THE HUNT family is trying to get a court injunction to prevent the Commodity Futures Trading Commission (CFTC) from releasing any more information about its investment in soybeans.

New date for commodity fund talks

GENEVA, May 5.
NEGOTIATIONS on a fund to finance stocks of major commodities, designed to keep prices and supplies in balance, are to resume here next November 7, to December 2, delegates to the executive Board of the United Nations Conference on Trade and Development (UNCTAD) decided yesterday.

Manure smell

The project was finally approved by the county planning authorities and then the population of the nearest village went into action. With little if any dissent, they pressed their dispute on the grounds of losing amenity - although the plant would have been out of sight of most of the village - and more cozily, perhaps, that the lorry traffic passing through the village would have been a danger to locals.

Drop in price of vegetables

BY OUR COMMODITIES STAFF
VEGETABLE PRICES have fallen sharply this week, despite the tardy spring and potatoes at 6p to 12p a pound are now at their cheapest since October 1975.

COMMODITY MARKET REPORTS AND PRICES

Table with columns for Metal, Lead, Zinc, Silver, Gold, etc. and their respective prices.

COFFEE

Table with columns for Coffee prices, including Arabica and Robusta grades.

PRICE CHANGES

Table showing price changes for various commodities like Metals, Grains, etc.

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SILVER

Table with columns for Silver prices, including London and New York markets.

SOYABEAN MEAL

Table with columns for Soyabean Meal prices, including various grades and origins.

U.S. Markets

Table with columns for U.S. Markets prices, including Soybeans, Grains, and Coffee.

FINANCIAL TIMES

Table with columns for Financial Times data, including Dow Jones and Reuters.

PUBLIC NOTICES

SHARPOUR METROPOLITAN
CITY OF SWANSEA
LONDON-Stocks: Exchange White C grade May/June 414. Bangladesh

WOOL FUTURES

Table with columns for Wool Futures prices, including various grades and origins.

EASIER TONE IN METALS

By Our Commodities Staff
An easing in the nearby shortage of lead supplies brought a further fall in prices on the London Metal Exchange yesterday.

MEAT/VEGETABLES

Table with columns for Meat/Vegetables prices, including various types of meat and vegetables.

# The Property Market

BY QUENTIN GUIRDHAM

## Planning for computers in Croydon

The matter of planning classification for computer centres is topical with one of the largest ever purpose built centres the National Westminster on the Aldgate fringe of the City of London to be topped out today.

The Town and Country Planning Acts have put computers into the office classification, doubtless for the good reason that most of the benefits that flow out from an office are an ancillary function of a business's normal operations. The computer centre within an office block remains the norm. Perhaps these regulations are also influenced by the fact that a computer centre is a centralized office, and the operations of an office are concentrated in one place. Computers, banks and the like, are in some sense in looking at this in property terms as an industrial operation.

Plans for the 32,000 square feet Mission Works, Croydon at around £130 a square foot where decent office space in Croydon is some what around £450.

Although it is not a computer centre, the other side of the coin is a particularly suitable building having been used as a computer centre by Philips Industries and now as a nearly new office building at the front.

But the planning considerations involved both getting an ODP and getting the Greater London Council to agree with the Greater London Council that the building is not a computer centre. The Greater London Council has been asked to consider the building as a computer centre, but the Greater London Council has not yet decided.

Perhaps these regulations are also influenced by the fact that a computer centre is a centralized office, and the operations of an office are concentrated in one place. Computers, banks and the like, are in some sense in looking at this in property terms as an industrial operation.

## Boisi charts foreign interest in U.S.

A YEAR ago, Mark Weinberg of Hambro & Lane, Wootton conference and heralded the death of most property development companies. Yesterday, James O. Boisi, an executive vice-president of J.P. Morgan and Co., a property man

turned banker, told the gathering about the U.S. real estate market. Weinberg's speech was possibly unimpeachable being a condition of continuing institutional interest in property and therefore a built-in existing investment values. Boisi's effort was equally provocative.

For despite his development experience, being responsible for large chunks of Park Avenue when with Dean DeLuca, and despite the fact that Morgan Guaranty kept itself clear of the REIT disaster, Boisi was unimpeachable about the real estate market. He then listed the attractions of the U.S. market at present, a list which puts other potential foreign investment areas in the shade.

In Britain, despite the activities of some pension funds, the extent of foreign capital pouring into the U.S. may be underestimated. There is much other European money going there, particularly German and Dutch, and the Axis have invested heavily and have some been very profitable. Even so, it was surprising to hear Boisi estimate that in the investment market, "We can see a net inflow of \$4.1m. are stable in excess of the valuation disclosed in connection with the offer by Booker to acquire Kinloch Ellis and the company will be retaining the other Kinloch property in Maidstone, a trading depot."

The last annual report from Raglan Property Trust included the news that the company was "now starting to review the possibility of new projects. This reviewing can scarcely have been more than academic, since

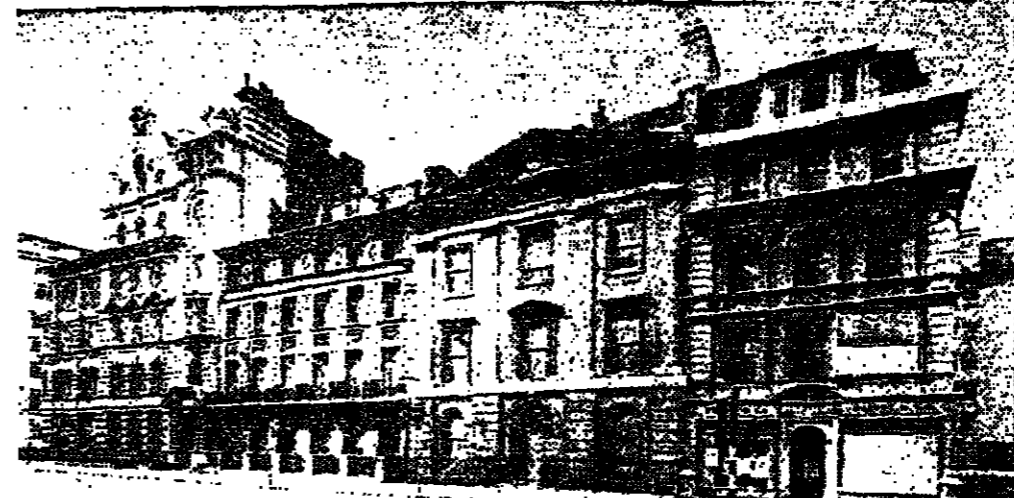
these things come very cheap by European standards, though he queried whether this cheapness was of much significance from the investment standpoint, or whether it meant the U.S. was due for sustained rise in rents. But one comparison he made was still, even with the devalued pound, most telling. The best Park Avenue blocks can still be rented at the equivalent of £8 a sq. ft. including taxes and service charges, where Morgan Guaranty in Stratford, East London, is paying £5 to £6 a sq. ft. before rate and charges.

## CUT AND ABOUT

Analyses for having last Friday reported the formal opening of the new Wiggins Teape headquarters in Basingstoke. It did not happen till this Tuesday, when Lord Mountbatten, as a Hampshire resident, welcomed the paper-makers as new arrivals after 200 years in London.

Booker McConnell has sold two office blocks in Maidstone which it acquired when buying Kinloch (Provision Merchants) in January, 1977. Both blocks are early 1970s developments with Medvale House (49,700 square feet) let to the Department of the Environment and Kent House (170,600 square feet) offices plus six shops (multi-tenanted). Net income is £181,972 and Booker McConnell says the net proceeds of £41m are available in excess of the valuation disclosed in connection with the offer by Booker to acquire Kinloch Ellis and the company will be retaining the other Kinloch property in Maidstone, a trading depot.

The last annual report from Raglan Property Trust included the news that the company was "now starting to review the possibility of new projects. This reviewing can scarcely have been more than academic, since



Long planning arguments, including appeals against a refusal of listed building consent, meant that the sale of this group of buildings in New Bridge Street, London, E.C.4, known as the Bridewell Site, missed the top of the market although plans for the sale go back to 1970. There was, finally, a planning consent gained by R. Seifert and Partners, totalling 83,000 square feet including the two retained listed buildings in the centre of the picture. The new scheme still does not appeal to any developer, and Haslemere Estates has paid somewhat less

than £3m. to conduct a restoration exercise producing 30,000 square feet in four self-contained units, with a further 30,000 square feet of new accommodation planned at the rear. Haslemere is working in conjunction with Refuge Assurance. The sellers, the Governors of Bridewell Royal Hospital (for whom Chesterians acted) were given the site by Edward VI to support their educational work in 1553 and this is the first time the site has changed hands in 424 years. Proceeds go toward costs of rebuilding at the present Bridewell school at Willey, Surrey.

having just managed to produce some figures in March 1976, the balance sheet now shows short-term borrowings of £20.3m. at that stage, current liabilities of £4.2m. and long-term borrowings of just £206,750. There was a revenue deficit of £8.1m. and shareholders' funds stood at minus £139,660. Gross income was down from £32m. a figure which included all the French properties, to £30,000 and is already well below this with further French and other sales (some top slices having been passed on to the funding

institutions). But the remaining team at Raglan hope to keep the company alive, the value of tax losses being potentially important, with the help of their bankers who have agreed in principle to a scheme which appears to limit their claims to existing assets. The unsecured and partially secured creditors who have to go along with this include some banks and the Inland Revenue, to whom the Battersea site of the old Bank National Finance Corporation, Edward Bates, Kleinwort Benson and the National Westminster—have been advancing sufficient so far.

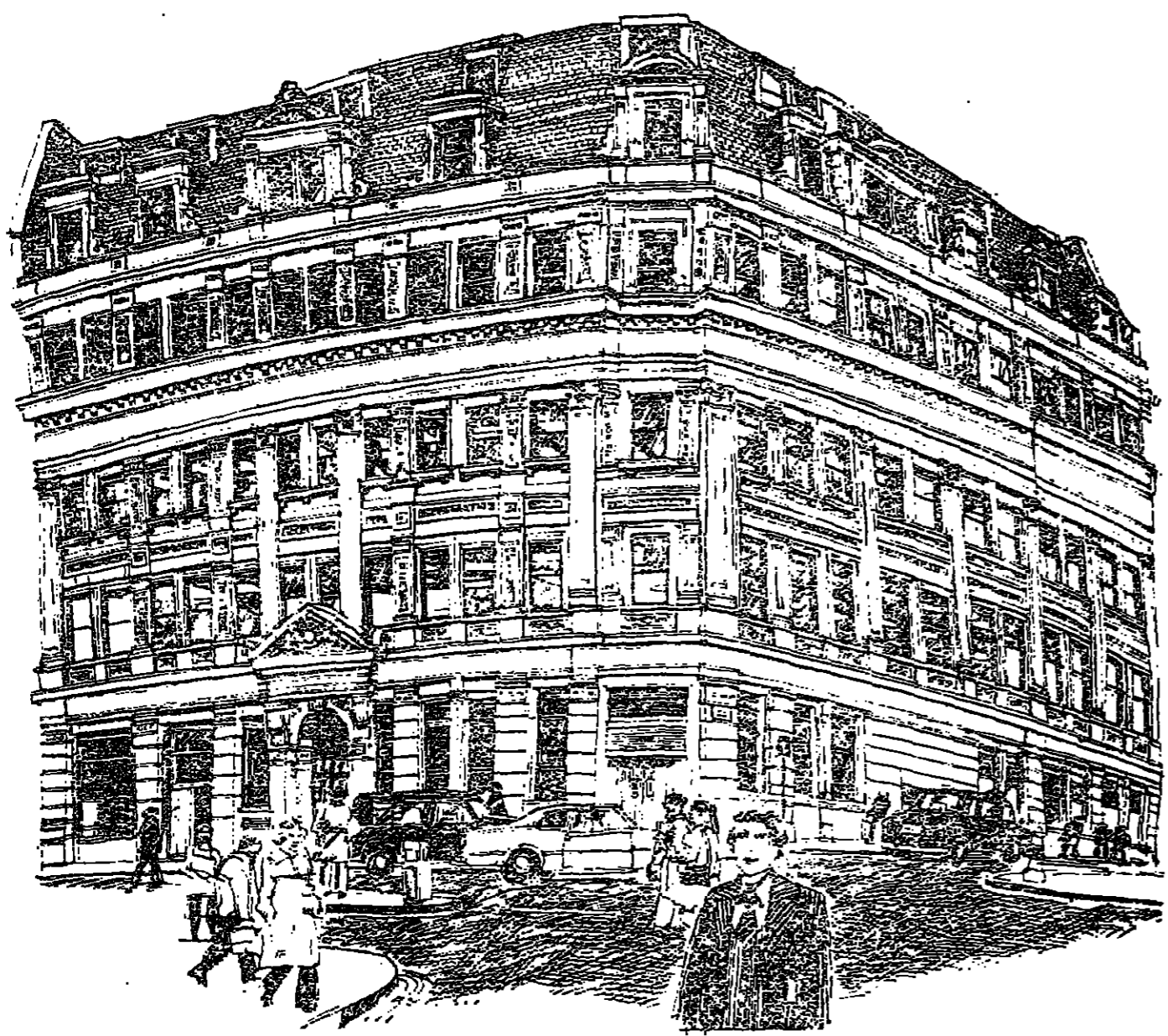
Shareholders will know more with the accounts, due soon, and though it will be no comfort, Raglan has actually done better than it might on some disposals and lettings—the Putney deal with the Police being at a high rent (though there is still a legal dispute with Hanover Property Unit Trust on the take-out, and the Battersea site of the old Bank National Finance Corporation has been placed with Jarratt and Co. Letting agent is Healey and Baker.

waiting for now—fixed assets at March 1976 being stated at £22.25m.—and largely Raglan's bit of the £26m. capital cost Bond Street development in Leeds (£2m.-£4m.?) where the 150,000 square feet of offices are the sticker, a substantial site in Newbury and the pending permission for 75,000 square feet net of offices at Emperor's Gate, London SW7. J. Walter Thompson supported an ODP on this, getting in exchange the chance to decide six months before completion whether it should take the building at 10 per cent. below market rent. Raglan, which has 40 per cent. of the Emperor's Gate equity, the remaining with British Airways, Trust Houses Forte and E.F.C., is still in negotiation with J.W.T. about what it might owe the advertiser for supporting the ODP, an issue arguing exercise given the huge diminished value of ODP support and the fact that the advertiser doesn't want the buildings any longer.

Agreement by the unsecured creditors, a fair wind in a squall market and continuing luck with disposals, might see a to-be amount left for Raglan shareholders, but the improbably-owned Sandbanks Ferry, running quietly on between Poole and Swanage and making £70,000 a year, will soon represent a major factor in the income stream.

Beaumont Properties, which has managed to pay an increased dividend for eight years on the trot, is going ahead with Phase 2 of its six-acre central area development at Sale, Cheshire. This is the rump of the site, leaving only a piece at the other end of the square where at one point a hotel was thought of. The fine new shop units will begin the covered market hall, recently re-opened after a fire soon after it had started trading, and is in the direction of a new Tesco store nearing completion. The £2m. building contract has been placed with Jarratt and Co. Letting agent is Healey and Baker.

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adjacent to M421 Fully Fitted Heating and Lighting Ready for immediate occupation. Further particulars from: WEATHERALL, HOLLIS & GILL 29 King Street, Leeds LS1 2HS Tel: 0532 442864

**TO INVESTORS**

I am again active in marketing of modest investments from £20,000 to £200,000. I invite enquiries from Vendors and Purchasers, generally or specifically. **JACK MENDOZA F.S.V.** 0273-72275 100 Watlington Rd., Hove BN1

---

**CENTRAL MARCHES**

Established Company of Commercial Property offering office accommodation from 1,000 sq. ft. to 50,000 sq. ft. in prime locations. Also offers a range of shops, airports and parking facilities. Please contact Jack Mendoza for a free brochure and telephone appointment and visit facilities. References required. Contact: Mr. B. W. Lister 041-834-4016

JKW 15A

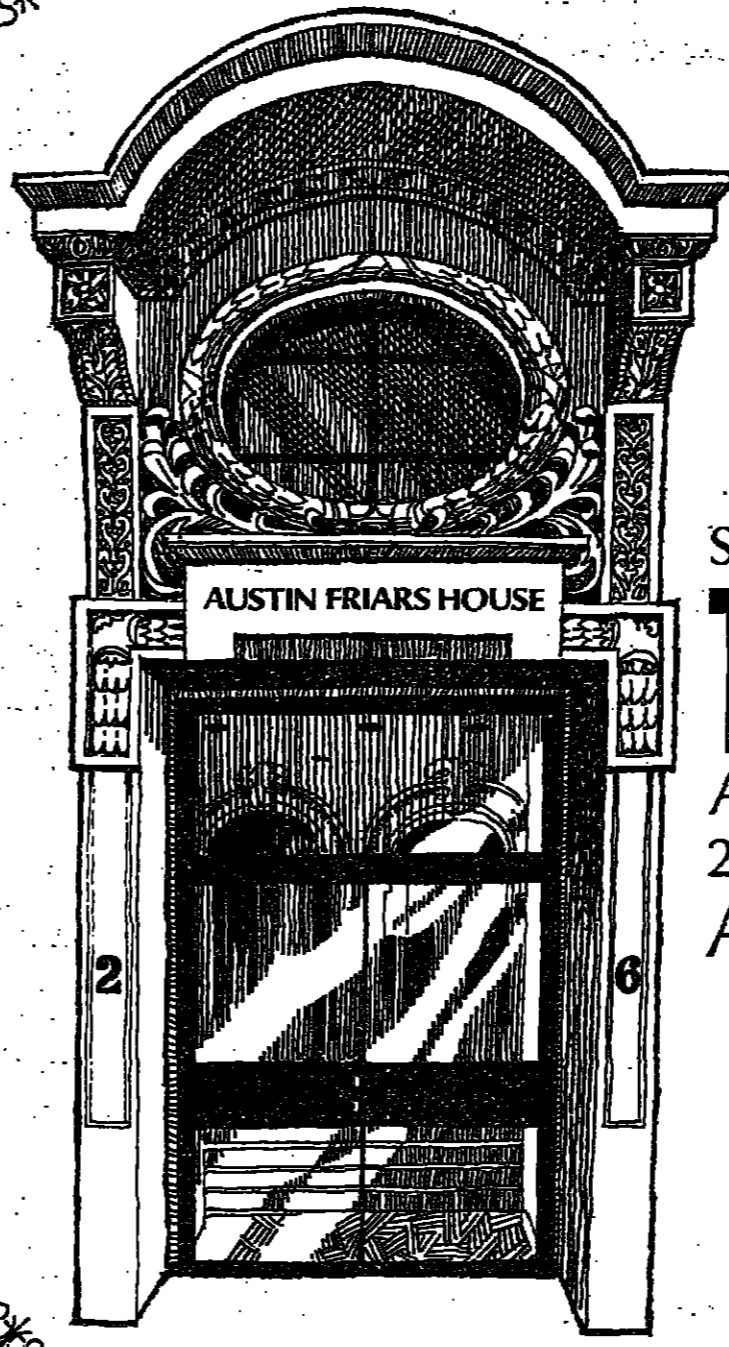
**INDUSTRIAL AND WAREHOUSE PREMISES THROUGHOUT THE U.K.**

- OSSETT-YORKSHIRE**  
New Factories—7/14,000 sq. ft.—TO LET
- CHESTERFIELD**  
Warehouse/Factory—8/25,000 sq. ft.—TO LET
- WREXHAM**  
Factories—3/6,000 sq. ft.—TO LET
- S. MANCHESTER**  
Factories/Warehouses—10/50,000 sq. ft.—TO LET
- WIDNES**  
Workshop—6,800 sq. ft.—FOR SALE/TO LET
- RUNCORN**  
Warehouse—27,000 sq. ft.—FOR SALE/TO LET
- LIVERPOOL**  
(1) Workshop/Store/Yard—2,700 sq. ft.—TO LET  
(2) Warehouse—8/51,000 sq. ft.—TO LET  
(3) Factory/Warehouse—1,400 sq. ft.—FOR SALE
- ISLINGTON N1**  
Freehold Warehouse & Offices—23,500 sq. ft.
- N. HERTS**  
New Factory and Offices—180,000 sq. ft.—FREEHOLD or TO LET
- S. HERTS**  
New Warehouses—15/30,000 sq. ft.—TO LET
- RADLETT, HERTS**  
New Warehouses—65/145,000 sq. ft.—TO LET
- CHELMSFORD**  
New Warehouses—6/80,000 sq. ft.—TO LET
- FOREST HILL, SE23**  
Warehouse/Factory—6,780 sq. ft.
- PECKHAM, SE15**  
Warehouse/Offices—3,700 sq. ft.
- LOUGHBOROUGH**  
Industrial Land—19.4 acres.  
Warehouses/Factories built as required.
- S. BEDS**  
New Factory/Offices—32,000 sq. ft.—TO LET

Joy 10 1550

**K for Industry**

- BRIERLEY HILL, Staffs.**  
52,500 sq. ft.  
Factory Premises — Pennine Trading Estate  
Lease for disposal  
No Premium
  - HEATHROW**  
26,000 sq. ft.  
Proposed Warehouse/Offices  
TO LET
  - LONDON, E.C.2**  
21,720 sq. ft.  
Modern Warehouse with ancillary Offices  
FREEHOLD FOR SALE or TO LET
  - LONDON, S.W.14**  
Headquarters Complex  
Factory and Offices  
38,000 sq. ft.  
TO LET
  - MILL HILL, N.W.7**  
Research Laboratories, Offices and Stores  
Totalling 21,514 sq. ft. on 3.3 acres  
FOR SALE
  - TONBRIDGE, Kent**  
New Warehouse Unit  
18,900 sq. ft. inc. 1,500 sq. ft. of Offices  
At a very attractive rent
  - WEST MOLESEY, Surrey**  
Factory and Offices  
32,500 sq. ft.  
FOR SALE
  - FREEHOLD INDUSTRIAL SITES**  
Exeter/Romsey (1/1 1/2 acres)  
Required for retaining clients
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Self-contained office building  
**TO BE LET**  
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Approx. 40,000sq.ft.

**JONES LANG WOOTTON**  
Chartered Surveyors  
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Tel: 01-606 4060 Telex: 885557

**JOHN Postlethwaite**  
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1 College Hill, London EC4R 2RN. Telephone: 01-248 4205 Telex: 888106

**PROPERTY COMPANIES URGENTLY REQUIRED**

Public Company with considerable funds available urgently wishes to acquire property companies. It is anticipated that suitable companies will have a substantial property portfolio and in any event will have property with a value in excess of £250,000.  
Approaches should be made directly (or through professional advisors) to retained surveyors Messrs. Leslie Lindott & Associates, where the matter will be attended to without delay.  
All replies will be treated in the very strictest confidence.

**LESLIE LINDOTT & ASSOCIATES**  
18 Seymour Street London W1  
01-935 6856

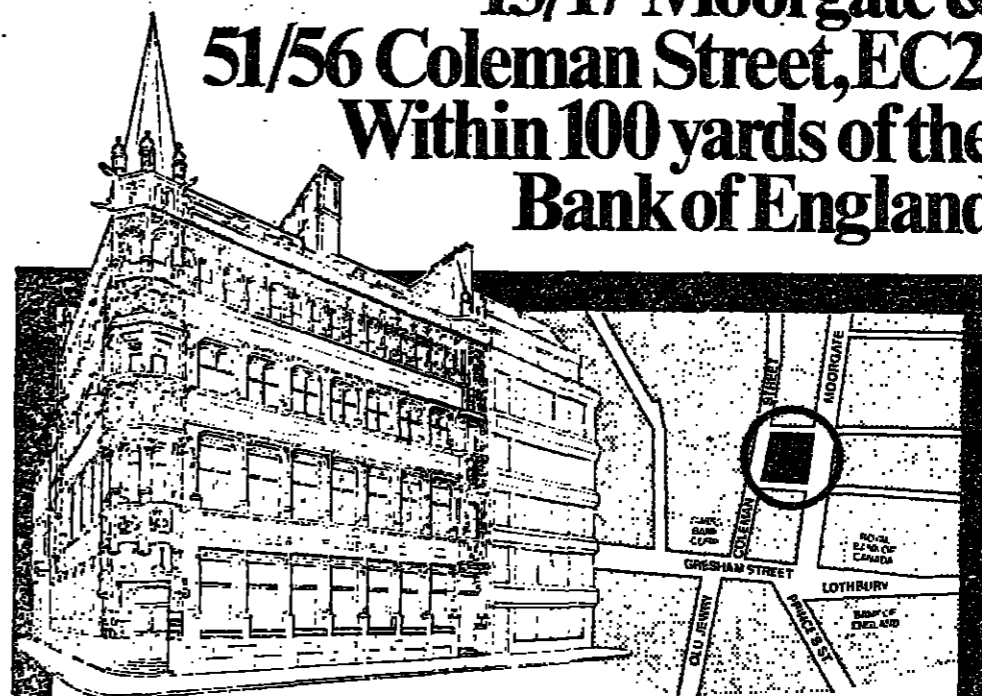
**FOR SALE BY TENDER**  
**OUTSTANDING WEST END FREEHOLD PROPERTY WITH CONSIDERABLE POTENTIAL**

**QUEENS HOUSE LEICESTER SQUARE LONDON W.C.2**

**TENDER DATE 31st MAY, 1977**

**Edward Erdman** 8 Grosvenor Street London W1X 6AD 01-629 8151 LONDON PARIS GLASGOW  
**ALLSOP & CO** 21 Soho Square, London W1 Tel: 437 6977

**City of London**  
**13/17 Moorgate & 51/56 Coleman Street, EC2.**  
Within 100 yards of the Bank of England



A prime investment property in one of the City's main banking positions occupied by Mullens & Co., Credito Italiano and Bank of California.  
The freehold is offered for sale by tender, 26th May 1977, unless sold privately, subject to a long lease at the very low ground rent of £52,500 per annum with reviews.  
Tender documents from Joint Sole Agents.

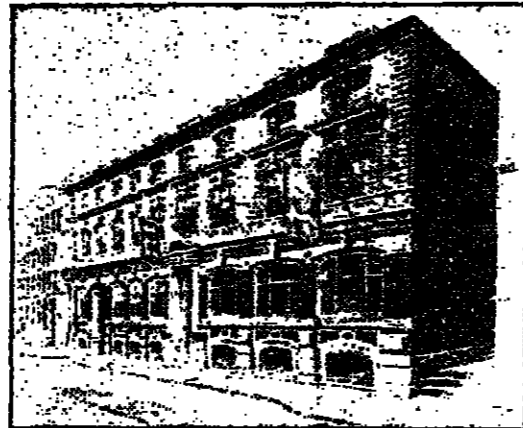
**Barrington Laurance** 1 South Audley Street, London W1Y 6HD. Tel: 01-4921041 Telex: 261988  
**ALLSOP & CO** 21 Soho Square, London W1Y 6AX. Tel: 01-437 6977 Telex: 267367

**E.C.2**  
**MODERN AIR CONDITIONED OFFICE BUILDING TO LET**

60,000 sq. ft.  
With ample basement parking  
PRINCIPALS AND RETAINED AGENTS WITH NAMED CLIENTS ONLY  
Write Box T.4621, Financial Times, 10, Cannon Street, EC4P 4BT.

**HARROW**  
8,000 sq. ft. Office Building  
Lift \* Central Heating \* Parking  
To Let At Under £3 per sq. ft. On New Lease (Ref. NKR)  
**Leavers**  
80 Bruton Street, London W1X 6AD Telephone 01-629 4261 01-489 2013  
Dublin Edinburgh Madrid Valencia Caracas

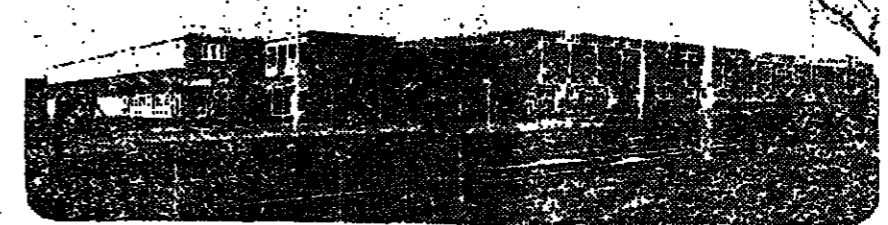
**St. Clement's House, 27 Clements Lane, London EC4. (Off Lombard Street)**



An office building of 40,850 sq. ft. approx. available in this excellent City location.  
Ideal for a Bank or as a Headquarters for any Company needing prestige representation in the City.  
For further details or comprehensive brochure, please contact us.

**Chestertons** Chartered Surveyors  
**Office property**  
9 Wood Street, Cheapside, EC2V 7AR. Telephone: 01-606 3055. Telex: 6812798.

**LIVERPOOL Speke Hall Road**  
Close Airport



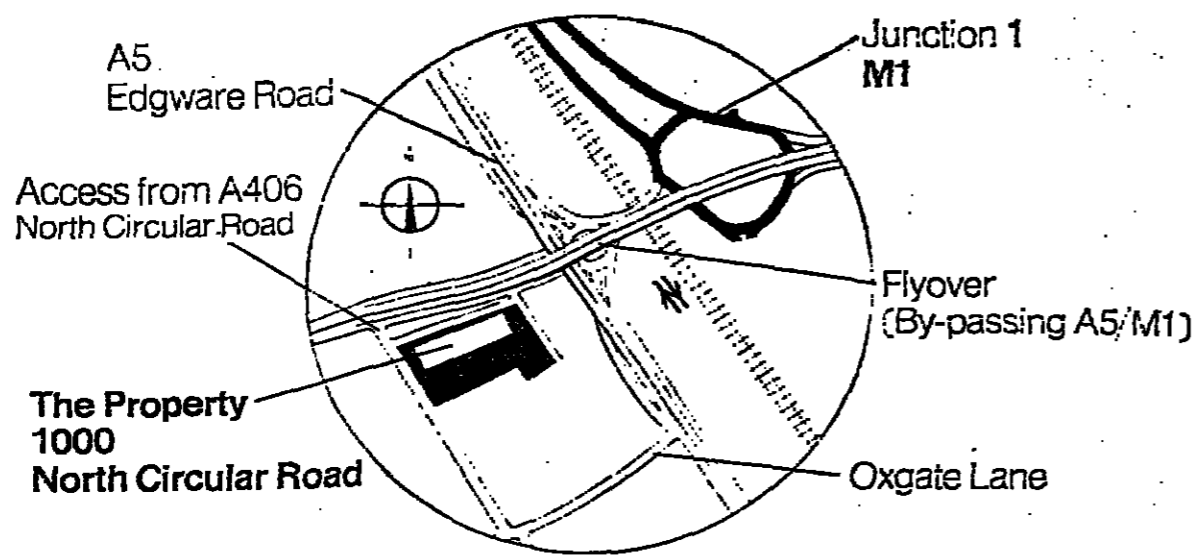
**The Superior Modern Factory and Office Premises**  
about 138,000 sq. ft.  
Also covered roadway of about 8000 sq. ft.  
**FOR SALE OR TO LET**

- \* CENTRAL HEATING
- \* SPRINKLERS
- \* CITY CENTRE 8 MILES
- \* Two 60cwt GOODS LIFTS
- \* CLOSE M62 & M56
- \* CANTEEN
- \* FREIGHTLINER TERMINAL NEARBY

**WOODS & PARTNERS**  
THE MELBOURNE WOODS PARTNERSHIP  
MELBOURNE BUILDINGS  
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TEL: 051-227 4200 (11 LINES)

**Chamberlain & Willows**  
Estate Agents, Surveyors, Valuers  
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On instructions from NCR Limited



### A Warehouse and Office Complex of 253,650sq ft on a 10.5-Acre Site

For sale freehold - or to let in its entirety. Offers are invited.

The property comprises the following: - Warehouse and ancillary factory area, 168,520sqft; Office area, 61,048sqft; Subsidiary buildings - industrial (warehousing), 24,082sqft Total net usable floor area: 253,650sqft.

Current planning application for redevelopment for 446,000sqft of warehousing. This property is offered on the basis that the existing building can be substantially adapted or completely redeveloped to suit the prospective applicant's requirements.

All enquiries to

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On the instructions of Insurance Company of North America the following well appointed OFFICE SUITES are available

## TO LET

**ALBION HOUSE**  
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4758 to 9560 sq. ft.

**WALSINGHAM HOUSE**  
35 SEETHING LANE, E.C.3.  
3770 sq. ft.

**Hampton & Sons**

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9. DOWGATE HILL  
LONDON EC4R 2TD.

NORTHWOOD, MIDDLESEX  
SHOP INVESTMENT



- \* Excellent rack-rented shop investment in town centre
- \* Gross income £35,149 per annum, with tenants including Baxters, Layds Bank, Recorder Ltd., etc.
- \* Local population growth 30% in next 4 years
- \* Offers invited for the freehold

Apply  
**CHRISTOPHER ROWLAND and COMPANY**  
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### Entire Office & Commercial Building

ADJ. EUSTON STATION

**18,000 sq. ft.**

LIFT, CENTRAL HEATING  
FLUORESCENT LIGHTS & CARPETS

Sole Agents:  
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01-930 1070  
Estate House 130 Jermyn Street  
London SW1Y 4UL

By order of  
the Worshipful Company of Merchant Taylors

### 7-11 BISHOPSGATE EC2

REFURBISHED OFFICES

TO LET

7,000sqft

Joint sole agents:

**NATHEWS GOODMAN**  
Mahem House 72 Upper Thames Street  
London EC4R 3UA 01-248 3200

**Stanley Hicks & Son**

COLLEGE HILL CHAMBERS  
23 COLLEGE HILL  
LONDON EC4R 2RT  
01-236 5857



**monklands district council**

### invites offers for the development of COATBRIDGE TOWN CENTRE (Phase 2 Redevelopment)

Phase 2 Redevelopment comprises of a 2.6 acre site in the heart of Coatbridge Town Centre and lies immediately adjacent to three recently completed commercial developments, including an Asda Superstore. The site has a frontage of over 450 feet to Main Street for which pedestrianisation plans are currently in preparation. Close and easy access is afforded to adequate free public car parking.

Coatbridge, a major industrial centre, lies 10 miles east of Glasgow city centre and, together with neighbouring Airdrie, forms the principal urban area within Monklands District which, with a population of one hundred and fifteen thousand, makes it one of the largest districts in Strathclyde Region.

Monklands District Council now invites offers for the development of this major town centre site.

A detailed Development Brief, incorporating the form of offer required, is available on request from: - A.I. Cowe, Dip.T.P., M.R.T.P.I., Director of Planning and Development, Monklands District Council, "Redholm", Laird Street, Coatbridge ML5 3LJ. Telephone: Coatbridge (0236) 24941. Ext. 256.

The closing date for receipt of all offers is noon on Mon, 4th July, 1977.

### FOR SALE MODERN WAREHOUSE/FACTORY

WALTHAM ABBEY, ESSEX

28,000 sq. ft. (approx)

- \* Prominent Location
- \* Large Surfaced Yard 46,000 sq. ft. (approx.)
- \* Good Floor Loading and Headroom
- \* Refrigeration Plant and Container Gantry Facilities - if required
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CITY ROAD  
FINSBURY SQUARE  
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OFFICE BUILDING  
APPROX.

5,200 Sq. Ft.

TO LET

or FREEHOLD

Telephone

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### HIGH CAPACITY WAREHOUSE

53,000 sq. ft.

**CRICKLEWOOD, N.W.2**

Close to A.5, A.406 and M.1

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Telephone 01-236 3000 Telex 85  
Manchester - Leeds - Bristol

### INDUSTRIAL

CLOSE TO

### KINGS CROSS STATION

Warehouse - 47,500 sq.ft.

Offices - 5,500 sq.ft.

NEWLY CONSTRUCTED  
AND READY FOR  
IMMEDIATE OCCUPATION

TO LET

AT ONLY

75p per sq.ft.

Apply Sole Agents:

**Hillier Parker**  
May & Rowden

77 Grosvenor Street, London W1A 2BT 01-629 7666  
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### FREEHOLD INVESTMENT

FOR SALE BY TENDER

Two Warehouses and 28 Shops all leased to a substantial tenant on 25 year full repairing and insuring Leases with 5 year upward rent reviews, all subject to review by March 1981.

CURRENT TOTAL RENTS £81,823

Particulars and Forms of Tender from:-

**STILGOES,**  
Ormond House,  
3 Duke of York Street,  
London SW1Y 6JS

Telephone 01-734 0011  
Telex 27993

**ERDINGTON INDUSTRIAL PARK**  
Chester Road, Erdington, Birmingham

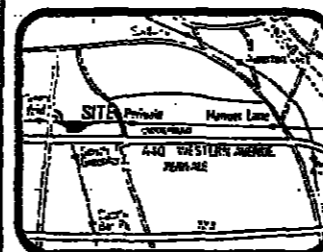
LAST TWO UNITS  
TO LET

15,500 & 12,900 sq ft, rent £112 p.s.f.  
Good Parking, Good Offices, Good Access  
in conjunction with King & Co., London, 01-236 3000

**NEALE & ALLDRIDGE**  
Chartered Surveyors  
80, NEWHALL STREET, BIRMINGHAM B3 3DE. 021-236 8288

### Greenford Middlesex

#### New Warehouse/Industrial Units to let



**PHASE I**  
Immediate occupation,  
8105 sq. ft. to  
43210 sq. ft.

**PHASE II**  
26296 sq. ft. to  
90587 sq. ft.

- \* Single storey 20 feet to eaves
- \* Industrial use subject to IDC
- \* High Standard Specification
- \* Close A40, 2 miles North Circular

Introducing Agents will be fully retained.

For further details contact:

**MASONBROOK LTD**

Property Consultants & Development, 17/18 Dryden Court, Parkleys, Ham Common, Surrey TW10 5LH  
Tel. 01-549 5201

### INVERNESS

BALLANTYNE HOUSE  
PRIME OFFICES TO LET  
NEW OFFICE BUILDING, JUST COMPLETED BY  
COSMAS DEVELOPMENT LTD. IN THE  
CENTRE OF INVERNESS

Immediate Occupation  
Units available from 600 sq. ft. to 10,000 sq. ft.  
These offices have been built to an exceptionally high standard, and include: • Suspended acoustic concrete ceilings incorporating integral fluorescent lighting • Full central heating • Life services • Fully carpeted throughout with Huga floor tiles • Unit on ground floor with display window, ideal for bank, insurance company or building society.

Further particulars from:  
**MACARTHUR STEWART & ORR**  
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### FREEHOLD INDUSTRIAL LAND, NORTHAMPTON

★ Six Acres

★ Easy Access to M1.

Sole agents **Chamberla & Wille**  
Estate Agents - Surveyors  
23 MOORGATE LONDON EC4R 4UL

Copy to 1550



STOCK EXCHANGE REPORT

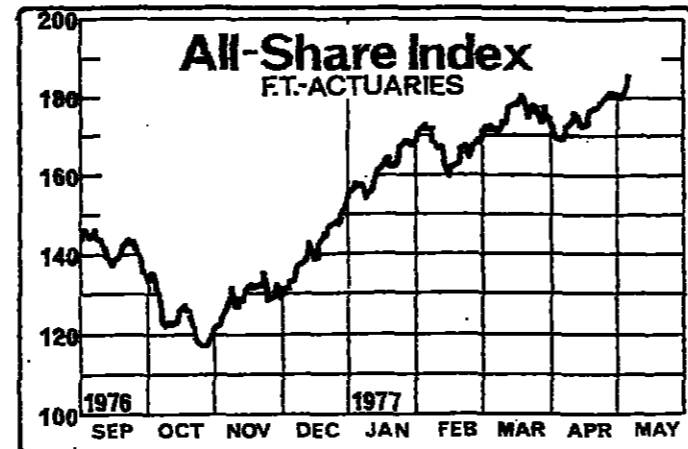
Firm again but below the best on pay policy doubts Index peak extended by 3.3 to 443.3—Numerous features

Account Dealing Dates Option... First Declared Last Account Dealings... Stock markets continued in firm vein yesterday despite some weakness at the opening...

before losing direction several times during the course of the day... in the afternoon, conditions were much the same as in the morning...

to a fairly static second-half, after a sharp higher interim profit... The North Sea oil boom in production that the Occidental Group is reported to be receiving...

Stock markets continued in firm vein yesterday despite some weakness at the opening... Prices of leading shares started cautiously lower following the overnight setback for the Government's pay policy...



Hotels and Caterers were featured late by a mark-up of 5 1/2 to 23p in Scott's Restaurant... Beecham rise afresh... Further gains in the miscellaneous industrial leaders were accompanied by a better trade...

There was a marked increase in turnover as measured by the number of official markings which was the highest for a month and...

split, due to take place shortly... Laurence Scott jump... Laurence Scott featured Electricals with a late jump of 3 1/2 to 108p on news that discussions are in progress...

Investment Trusts attracted a good business, partly institutional, and closed at the day's best... The day's best domestic market was the All-Share index...

FINANCIAL TIMES STOCK INDICES table with columns for Government, Fixed Interest, Industrial Ordinary, etc., and a sub-table for HIGHS AND LOWS.

Fundinvest were raised 4 in 34p... Shippings continued to figure prominently... The Gold Mines Index fell to 115.0 but leading was not...

A FINANCIAL TIMES SURVEY IRAN JULY 25 1977. The Financial Times is preparing to publish a survey on Iran in its edition of July 25 1977. It will examine political and economic developments in detail...

RECENT ISSUES table listing various stocks and their prices. Includes sections for EQUITIES, FIXED INTEREST STOCKS, 'RIGHTS' OFFERS, and ACTIVE STOCKS.

FT-ACTUARIES SHARE INDICES table showing equity groups and sub-sections. Includes sections for EQUITY GROUPS, EQUITY GROUPS & SUB-SECTIONS, and NEW HIGHS AND LOWS FOR 1977.

Handwritten note at the bottom left: 'Up 100 to 15.50'. Other small text and advertisements at the bottom of the page.

Handwritten note: 100/100 1.50

AUTHORISED UNIT TRUSTS

OFFSHORE AND OVERSEAS FUNDS

Table of Authorised Unit Trusts listing various funds such as Henderson Administration, Fidelity Unit Trust, and others with their respective details.

Table of Offshore and Overseas Funds listing international investment funds like Keydex, King & Shaxson, and others.

Table of Base Lending Rates from various banks including B.N. Bank, Hill Samuel, and others.

INSURANCE, PROPERTY, BONDS

Table of Insurance, Property, and Bonds listing various providers like Abbey Life, General Portfolio, and others.

COMMODITY PRICE MOVEMENTS

Table of Commodity Price Movements showing weekly and monthly changes for various goods.

CLIVE INVESTMENTS LIMITED advertisement with contact information and a list of services.

INSURANCE BASE RATES table showing rates for different types of insurance.

INDUSTRIALS (Miscel.)

FT SHARE INFORMATION SERVICE

DRIVERS JONAS Chartered Surveyors London Aberdeen Milan

BRITISH FUNDS

Table of British Funds with columns for Name, Price, and % Change.

Over Fifteen Years

Table of funds with a 15-year track record, including names and performance metrics.

INTERNATIONAL BANK

Table of international bank shares with columns for Name, Price, and % Change.

CORPORATION LOANS

Table of corporation loans with columns for Name, Price, and % Change.

COMMONWEALTH & AFRICAN LOANS

Table of Commonwealth and African loans with columns for Name, Price, and % Change.

FOREIGN BONDS & RAILS

Table of foreign bonds and rails with columns for Name, Price, and % Change.

AMERICANS

Table of American shares with columns for Name, Price, and % Change.

CANADIANS

Table of Canadian shares with columns for Name, Price, and % Change.

BANKS AND HIRE PURCHASE

Table of banks and hire purchase companies with columns for Name, Price, and % Change.

BEERS, WINES AND SPIRITS

Table of beer, wine, and spirit companies with columns for Name, Price, and % Change.

BUILDING INDUSTRY, TIMBER AND ROADS

Table of building, timber, and road companies with columns for Name, Price, and % Change.

BUILDING INDUSTRY - Continued

Continuation of building industry shares with columns for Name, Price, and % Change.

CHEMICALS, PLASTICS

Table of chemical and plastic companies with columns for Name, Price, and % Change.

CINEMAS, THEATRES AND TV

Table of cinema, theatre, and TV companies with columns for Name, Price, and % Change.

DRAPERY AND STORES

Table of drapery and store companies with columns for Name, Price, and % Change.

DRAPERY AND STORES - Continued

Continuation of drapery and store shares with columns for Name, Price, and % Change.

ELECTRICAL AND RADIO

Table of electrical and radio companies with columns for Name, Price, and % Change.

ENGINEERING, MACHINE TOOLS

Table of engineering and machine tool companies with columns for Name, Price, and % Change.

HOTELS AND CATERERS

Table of hotel and caterer companies with columns for Name, Price, and % Change.

ENGINEERING - Continued

Continuation of engineering shares with columns for Name, Price, and % Change.

FOOD, GROCERIES, ETC.

Table of food, grocery, and other companies with columns for Name, Price, and % Change.

ADDITIONAL SHARES

Table of additional shares with columns for Name, Price, and % Change.

Main table of industrial shares with columns for Name, Price, and % Change.

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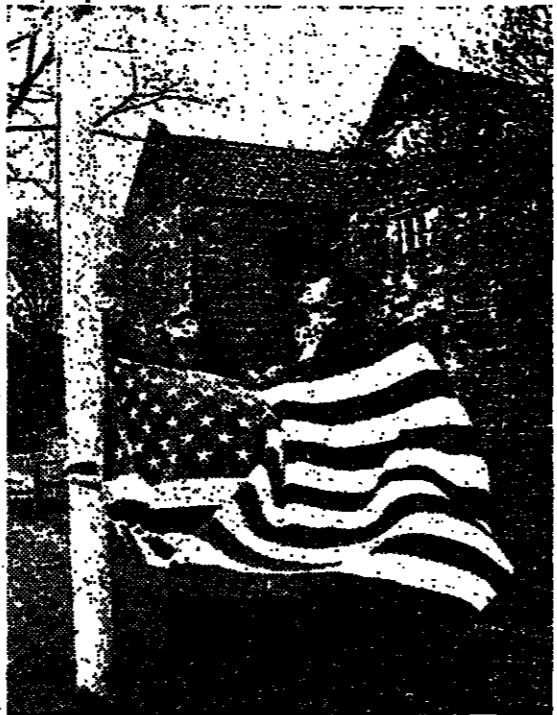




WASHINGTON, CO. DURHAM, PREPARES FOR PRESIDENT CARTER'S VISIT TODAY

Almost like when Sunderland won the Cup

BY IAN BREACH  
THE NORTH EAST has a flair for treating the rest of the world as it treats its own...



Old Glory is raised at Washington Old Hall.

the Washington Arms, one of the village's two public houses. No one, least of all the nervous security men...

Best in planning

What Mr. Carter will not see much of — and what will be missed by most of the accompanying visitors, observers, and pressmen—is a community that has combined much of that which is best in both British and American town planning.

Sense of occasion

Only in the last few hours before the visit, however, has the sense of occasion begun to grip the town.

U.S. pressure puts British nuclear deal at risk

BY DAVID FISHLOCK, SCIENCE EDITOR.

ANOTHER LARGE nuclear export contract, worth nearly £100m. to Britain, for enrichment of uranium, is being jeopardised by U.S. pressure...

SALZBURG, May 5.

in withdrawal of a nuclear station's operating licence. Britain and West Germany share the view that Brazil, having signed a stringent safety undertaking endorsed by the International Atomic Energy Agency...

Bomb-proof atom process

DETAILS OF a new French enrichment technique, for enriching uranium and claimed to be 'proliferation-proof' — intrinsically secure against use for making nuclear explosives — were released in Salzburg yesterday.

will be described and demonstrated at the International Atomic Energy Agency's nuclear conference.

Leyland car unions support Ryder plan

BY ARTHUR SMITH, MIDLANDS CORRESPONDENT

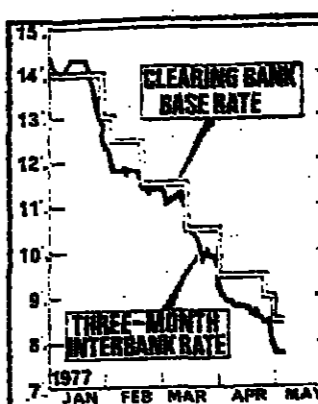
LEYLAND CARS' trade unions have pledged wholehearted support for the company's appeal to the Government...

U.S. leads revival in chemicals

THE LEX COLUMN

This time last year most of the major chemical companies were bubbling over with enthusiasm...

Index rose 3.3 to 443.3



Thomson Organisation

The Thomson Organisation expects to have a substantial part of its development costs met in 1978. At the end of 1978, the company's outlays on the project are estimated to be 60 per cent.

Nat. & Commercial

While the rest of the banks were enjoying a bounce back in share prices yesterday—the sector index rose by 3.6 per cent.

Weather

UK TODAY: MOSTLY DRY with sunny intervals. Scattered showers in East and E. England.

Profitability

According to CBI, the real rate of return on industrial and commercial companies failed to show a significant recovery in 1976, which reached in 1975 (it was 5.5 per cent or more until 1976).

Saudis may increase crude oil price

FINANCIAL TIMES REPORTER

CROWN PRINCE FAHD of Saudi Arabia has agreed in principle to raise the price of crude oil to 5 per cent above the current levels, thus narrowing the division within OPEC.

Washington visit

Two events could influence Saudi Arabia to shift towards the majority at the next OPEC conference scheduled for July 12 in Stockholm—Crown Prince Fahd's visit to Washington starting about May 23 and the outcome of the Conference on International Economic Co-operation which will be concluded with the Ministerial finite set for Paris on June 3.

Influence

Al Anwar, traditionally a pro-Egyptian newspaper in the days of President Nasser but which recently has become heavily under Syrian influence, has respectable antecedents and on a subject not relating to the Lebanon or Syria could be considered objective.

CEGB profit

Continued from Page 1

equipment. If the Board gave them a new order now, the inevitable redundancies would merely be postponed.

Loss throws future of Times into doubt

BY MAX WILKINSON

THE FUTURE of The Times was thrown into doubt yesterday by the Thomson Organisation's annual report. It contained a warning that the Times and its sister paper, the Sunday Times, could not be secure unless print unions agreed to introduction of a computerised system...

Plan costs £25m. The Thomson organisation is preparing to spend £25m. on computerised typesetting and other technological innovations throughout its regional and national papers. This investment will be phased up to 1980.

BUSINESS CENTRES

Table with columns for city, time, and business status. Includes Amsterdam, Athens, Barcelona, Berlin, etc.

HOLIDAY RESORTS

Table with columns for resort name, location, and status. Includes Alesio, Alghero, Amalfi, etc.

Advertisement for PENSIONS and CRUSADER Insurance, featuring 'A decision must be made' and listing various pension and insurance products.

Handwritten note: 409,00 13/50